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NASA THESAURUS

VOLUME 1

Hierarchical Listing With Definitions

National Aeronautics and
Space Administration

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Introduction

The *NASA Thesaurus* contains the authorized subject terms by which the documents in the NASA STI Databases are indexed and retrieved. The *NASA Thesaurus* comprises two volumes: *Volume 1 – Hierarchical Listing With Definitions* and *Volume 2 – Rotated Term Display.*

The *Hierarchical Listing With Definitions* contains all subject terms and USE cross references currently approved for use, and displays the full hierarchical structure for each term. New with the 1998 edition, is the inclusion of term definitions previously contained in a separate volume of the *NASA Thesaurus* (Volume 3). In addition, the new listing has been developed to serve as an orthographic authority for upper/lowercase forms of all terms and cross references. A ***term-added date***, displayed for all terms added after April 1988, is also new in this edition. The listing includes terms appearing in the *NASA Thesaurus, Preliminary Edition* (December 1967), the *NASA Thesaurus Alphabetical Update* (September 1971), the *NASA Thesaurus* (1982, 1985, 1988, and 1994 editions), and other terms approved for use through the first of December 1997. Over 17,700 terms, 3,832 definitions, and approximately 4,000 USE references are contained in the *Hierarchical Listing With Definitions*.

The *Rotated Term Display* is a ready-reference tool which provides thousands of additional 'access points' to the thesaurus terminology. It contains the postable terms and nonpostable terms found in the *Hierarchical Listing* arranged in a KWIC (key-word-in-context) index. It is a useful companion to the *Volume 1* listing, containing more than 21,000 entries.

The *NASA Thesaurus* is updated by the *NASA Thesaurus Supplement* until a new edition is issued. The *NASA Thesaurus Supplement* is cumulative and is published semiannually in March and September. It includes complete hierarchies for all new terms, definitions when available, and the *Rotated Term Display.* A listing of term deletions and changes is also included. Suggestions for term modification, deletion, and addition should be addressed to:

Lexicographer
NASA Center for AeroSpace Information
800 Elkridge Landing Road
Linthicum Heights, MD 21090-2934

The terminology of the *NASA Thesaurus* is based in large part on the actual indexing vocabulary developed by NASA during the 1960's. Other thesauri, notably the DOD *Thesaurus of Engineering and Scientific Terms* (AD-672000), have provided additional candidate terms. The general guidelines for the initial creation of the *NASA Thesaurus* were based on the COSATI *Guidelines for the Development of Information Retrieval Thesauri* (1 September 1967). Continuing development of the *NASA Thesaurus* conforms to the thesaurus standard of the National Information Standards Organization (*Guidelines for the Construction, Format, and Management of Monolingual Thesauri*, ANSI/NISO Z39.19-1993).

Nomenclature and Conventions

Postable Terms. Subject terms that have been approved for use in indexing, and thus can be 'posted.' In *Volume 1*, postable terms are shown in non-italic type.

Nonpostable Terms. Terms that are included for cross reference information and cannot be used for indexing. In *Volume 1*, nonpostable terms are set in italics.

Term Selection. Subject terms have been chosen on the basis of their significance and use in aerospace literature and their effectiveness in representing productive retrieval concepts. Particular consideration has been given to frequency of use in earlier NASA indexing and search vocabularies, to relationships with other terms in the vocabulary, and to precise scientific and technical usage.

Noun Usage. In general, subject terms are presented in the noun form.

Singular vs. Plural. The plural form has, in general, been used for subject terms. The singular form, however, is employed for non-count nouns (such as *snow*), terms that refer to unique entities such as *Mariner 10 Space Probe*, and terms related to specific processes, properties, and conditions.

Term Length. No more than 42 characters, including spaces, are used for any subject term. Various words in longer terms are sometimes truncated. Full expanded forms of such truncated terms are generally included in the scope notes.

Term Ambiguity. When subject terms have more than one meaning in aerospace usage, or where distinction between terms must be made, clarification is provided in one of two ways:

a) Parenthetical qualifying expressions or glosses are added, becoming part of the subject term. For example:

sizing (shaping)
sizing (surface treatment)

b) Scope notes are also added for explanation or definition; they do not become part of the subject term. For example:

rotational states
SN (LIMITED TO MOLECULAR ENERGY LEVELS — EXCLUDES ROTATIONAL DYNAMICS OF VEHICLES OR OTHER BODIES)

Word Order. Subject terms that consist of more than one word are listed in *direct order*, i.e., in their natural word order rather than in an inverted form. (The *Rotated Term Display* can be used to access terms by embedded words.)

Abbreviations and Acronyms. Abbreviations and acronyms that are in common usage in the aerospace and general engineering communities are employed for some postable terms in this thesaurus. In most cases, USE cross references are made from the unabbreviated forms. For example:

Orbiting Solar Observatory
USE **OSO**

Synonyms. When candidate subject terms are true synonyms, one is chosen to be the valid, or postable term, and the other is provided with a USE cross reference. For example:

columbium
USE **niobium**

niobium
UF *columbium*

Array Terms. Subject terms with meanings either too broad or ambiguous for effective indexing or retrieval of information, have been designated array terms and carry the following scope note (USE OF A MORE SPECIFIC TERM IS RECOMMENDED — CONSULT THE TERMS LISTED BELOW). Relationships with other postable terms are shown by the Related Term (RT) reference only. For example:

∞ **beams**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED — CONSULT THE TERMS LISTED BELOW)
RT beams (radiation)
beams (supports)

An infinity symbol (∞) precedes an array term in each of its appearances in *Volume 1*.

Identifiers. In the *NASA Thesaurus*, identifiers (i.e., terms that designate unique entities) are treated as regular terms and are provided complete cross references. Most identifiers are proper nouns and many include a numeric or alphabetic designation for a particular model or item. As a general rule, identifiers are added to the Thesaurus only if they have an important relation to the aerospace sciences.

F–111 aircraft
UF *LASV*
TFX aircraft
GS attack aircraft
. fighter aircraft
. . **F–111 aircraft**
General Dynamics aircraft
. **F–111 aircraft**
Grumman aircraft
. **F–111 aircraft**
jet aircraft
. turbofan aircraft
. . **F–111 aircraft**
supersonic aircraft
. **F–111 aircraft**
RT ∞ aircraft
mission adaptive wings
variable sweep wings

Cross Reference Structure

Cross reference relationships in the *Hierarchical Listing With Definitions* are shown as follows:

Cross References	Notation
Broader Term	GS
Narrower Term	GS
Related Term	RT
Use	USE
Used For	UF

These cross references have the following applications:

Broader Term. This reference indicates that the term represents a more inclusive concept. In the Generic Structure (GS), the broader terms appear above and to the left of the term referenced. For example:

reentry communication
GS telecommunication
. space communication
. . spacecraft communication
. . . **reentry communication**

The terms *telecommunication*, *space communication*, and *spacecraft communication* are broader terms to *reentry communication*.

Narrower Term. This reference indicates that the term represents a more specific concept. In the Generic Structure (GS), the narrower terms appear below and to the right (indented) of the term referenced. For example:

GS **scanners**
. Coastal Zone Color Scanner
. horizon scanners
. infrared scanners
. ocean color scanner
. optical scanners
. . flying spot scanners
. . multispectral band scanners
. . . Thematic Mappers (Landsat)
. ultrasonic scanners

The terms *Coastal Zone Color Scanner, horizon scanners, infrared scanners, ocean color scanners, optical scanners,* and *ultrasonic scanners* are narrower terms to *scanners*. The terms *flying spot scanners, multispectral band scanners,* and *Thematic Mappers (Landsat)* are narrower to both *optical scanners* and *scanners.*

The number of narrower terms is not limited. For example, *artificial satellites* has nearly 500 narrower terms.

Related Terms (RT). This reference indicates that the two terms are conceptually associated, but not equivalent or generically related. The RT relationship is reciprocal, as illustrated in the following example:

radar equipment
RT radio equipment

radio equipment
RT radar equipment

Use (USE). This reference indicates that the listed term is not 'postable,' i.e., not a valid term, and that the term or terms adjacent to the USE indicator should be used instead. Note that all nonpostable terms are set in italics. For example:

jet airstreams
USE **jet streams (meteorology)**

Used For (UF). This relation is the reciprocal of the USE cross reference and indicates that the term listed above the UF indicator is a valid or 'postable' term, and term or terms adjacent to the UF indicator are nonpostable. For example:

jet streams (meteorology)
UF *jet airstreams*

Filing Order

The ordering of subject terms into an alphabetical arrangement can be accomplished in several ways. The most commonly used methods are the letter-by-letter, word-by-word, and the computer sorting order. In the absence of any universal agreement on a standardized approach, a word-oriented modification of the computer sorting technique has been adopted in this thesaurus.

A special feature has been added to this technique to sort numeric designations in natural ascending order. Non-alphanumeric characters contained within terms are sorted prior to alphanumeric characters. In Volume 2, non-alphanumerics are ignored altogether for the general KWIC sort. Thus, embedded parentheses are filed before the alphabet in Volume 1, but are ignored for filing in Volume 2. Hyphens, slashes and periods follow blank spaces.

Retrospective Indexing

Between 1984 and 1993, all terms added to the *NASA Thesaurus* were retrospectively assigned to past database records using a method that combined advanced search strategies and manual review. Most of the terms for which this procedure was carried out can be identified by checking the *term-added date* that appears directly below the term in Volume 1. Term-added dates are provided for all terms added to the *NASA Thesaurus* after April 1988.

Thesaurus Term Definitions

New with this 1998 edition is the inclusion of term definitions previously contained in a separate volume of the *NASA Thesaurus* (Volume 3).

Definitions are given for most terms added since 1976 as well as for many earlier terms. Definitions of more common or general scientific terms are given a NASA slant if one exists. Certain

terms are not defined as a matter of policy: common place names, chemical elements, specific models of computers, and non-technical terms. Other terms lack definitions because the *NASA Thesaurus* predates by a number of years the systematic effort to define terms. Nevertheless, definitions of older terms are continually being added.

Many of the definitions contained in the *Thesaurus* were constructed by lexicographers at the NASA Center for AeroSpace Information, who rely on the following sources for their information: experts in the field, literature searches from the NASA STI Databases, and specialized references. Other definitions were obtained from the following sources:

AGI. *Glossary of Geology*, 3rd edition. Alexandria, VA, American Geological Institute, 1987.

ASTM. *Compilation of ASTM Standard Definitions*, 6th edition. Philadelphia, PA, ASTM, 1986. Copyright, the American Society for Testing and Materials (ASTM). All rights reserved. Used with the permission of ASTM. The original definitions appeared in the *Annual Book of ASTM Standards*.

DOE. *Energy Data Base Subject Thesaurus* (DOE/TIC-7000-R7). Oak Ridge, TN, Department of Energy, 1987.

IEEE. *Standard Dictionary of Electrical and Electronics Terms*, Fourth ed., New York, NY, IEEE, 1988.

SP-7. *Dictionary of Technical Terms for Aerospace Use*, NASA SP-7. Washington, DC, NASA, 1965.

In some cases, definitions from these sources have been subjected to minor editorial alterations; for example, to make a definition agree in number with the NASA form of the term.

Previous Editions

NASA Thesaurus; Subject Terms for Indexing Scientific and Technical Information. Preliminary Edition, 1967. NASA SP-7030. 3 Vols., *Vol. 1, Alphabetical Listing, A-L; Vol. 2, Alphabetical Listing, M-Z; Vol. 3, Appendixes.*

NASA Thesaurus Alphabetical Update, 1971. NASA SP-7040.

NASA Thesaurus. 1976 Edition. NASA SP-7050. 2 Vols., *Vol. 1, Alphabetical Listing; Vol. 2, Access Vocabulary.*

NASA Thesaurus. 1982 Edition. NASA SP-7051. 2 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary.*

NASA Thesaurus. 1985 Edition. NASA SP-7053. 2 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary.*

NASA Thesaurus. 1988 Edition. NASA SP-7064. 3 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary; Vol. 3, Definitions.*

NASA Thesaurus. 1994 Edition. NASA SP-7096. 3 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary; Vol. 3, Definitions.*

Typical Hierarchical Listing With Definition

① **microbursts (meteorology)**
② *(added January 1993)*
③ SN (EXCLUDES IONOSPHERIC RADIATION MICROBURSTS)
④ DEF A strong, localized downdraft that strikes the ground creating an outflow of severe winds near the ground that diverge radially from the impact point.
⑤ UF *bow echo microburst events*
⑥ GS meteorology
. micrometeorology
. . **microbursts (meteorology)**
storms
. storms (meteorology)
. . downbursts
. . . **microbursts (meteorology)**
⑦ RT aviation meteorology
flight hazards
thunderstorms
vertical air currents
wind shear

Key
1. Postable Term
2. Date Added
3. Scope Note
4. Definition
5. Used For Term
6. Generic Structure
7. Related Term

Typical USE Cross Reference

① *vacuum ultraviolet radiation*
② USE **far ultraviolet radiation**

Key
1. Nonpostable Term
2. Postable Note

Typical Array Term Listing

① ∞ **fields**
② SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
③ RT boson fields
electric fields
field of view
field theory (algebra)
field theory (physics)
gravitational fields
magnetic fields
military air facilities
self consistent fields
visual fields

Key
1. Array Term
2. Scope Note
3. Related Term

NASA THESAURUS

VOLUME 1

Hierarchical Listing With Definitions

A

A stars
GS celestial bodies
. stars
. . early stars
. . . hot stars
. . . . **A stars**
RT blue stars
peculiar stars
Wolf-Rayet stars

A-1 aircraft
UF *Skyraider aircraft*
GS attack aircraft
. **A-1 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **A-1 aircraft**
monoplanes
. **A-1 aircraft**
RT∞ aircraft

A-2 aircraft
UF *Savage aircraft*
GS attack aircraft
. bomber aircraft
. . **A-2 aircraft**
jet aircraft
. **A-2 aircraft**
monoplanes
. **A-2 aircraft**
North American aircraft
. **A-2 aircraft**
RT∞ aircraft

A-3 aircraft
UF *A3D aircraft*
Skywarrior aircraft
GS attack aircraft
. bomber aircraft
. . **A-3 aircraft**
jet aircraft
. **A-3 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **A-3 aircraft**
monoplanes
. **A-3 aircraft**
RT∞ aircraft

A-4 aircraft
UF *A4D aircraft*
Skyhawk aircraft
GS attack aircraft
. bomber aircraft
. . **A-4 aircraft**
jet aircraft
. **A-4 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **A-4 aircraft**
monoplanes
. **A-4 aircraft**
RT∞ aircraft
J-65 engine

A-5 aircraft
UF *A3J aircraft*
Vigilante aircraft
GS attack aircraft
. bomber aircraft
. . **A-5 aircraft**
jet aircraft
. **A-5 aircraft**
monoplanes
. **A-5 aircraft**
North American aircraft
. **A-5 aircraft**
supersonic aircraft
. **A-5 aircraft**
RT∞ aircraft

A-6 aircraft
UF *A2F aircraft*
Intruder aircraft
GS attack aircraft
. bomber aircraft
. . **A-6 aircraft**
Grumman aircraft
. **A-6 aircraft**
jet aircraft
. **A-6 aircraft**
monoplanes
. **A-6 aircraft**
RT∞ aircraft

A-7 aircraft
UF *Corsair aircraft*
GS attack aircraft
. **A-7 aircraft**
jet aircraft
. turbofan aircraft
. . **A-7 aircraft**
Ling-Temco-Vought aircraft
. **A-7 aircraft**
monoplanes
. **A-7 aircraft**
RT∞ aircraft

A-9 aircraft
GS attack aircraft
. **A-9 aircraft**
Northrop aircraft
. **A-9 aircraft**
reconnaissance aircraft
. **A-9 aircraft**
RT∞ aircraft

A-10 aircraft
GS attack aircraft
. **A-10 aircraft**
Republic aircraft
. **A-10 aircraft**
RT∞ aircraft

A-11 satellite
USE **Echo 1 satellite**

A-12 satellite
USE **Echo 2 satellite**

A-37 aircraft
GS attack aircraft
. **A-37 aircraft**
Cessna aircraft
. **A-37 aircraft**
monoplanes
. **A-37 aircraft**
RT∞ aircraft
∞ military aircraft
T-37 aircraft

A-300 aircraft
GS commercial aircraft
. European Airbus
. . **A-300 aircraft**
jet aircraft
. European Airbus
. . **A-300 aircraft**
passenger aircraft
. European Airbus
. . **A-300 aircraft**
transport aircraft
. European Airbus
. . **A-300 aircraft**
RT∞ aircraft
international cooperation

A-310 aircraft
GS commercial aircraft
. European Airbus
. . **A-310 aircraft**
jet aircraft
. European Airbus
. . **A-310 aircraft**
passenger aircraft
. European Airbus
. . **A-310 aircraft**
transport aircraft
. European Airbus
. . **A-310 aircraft**
RT international cooperation

A-320 aircraft
GS commercial aircraft
. European Airbus
. . **A-320 aircraft**
jet aircraft
. European Airbus
. . **A-320 aircraft**
passenger aircraft
. European Airbus
. . **A-320 aircraft**
transport aircraft
. European Airbus
. . **A-320 aircraft**
RT international cooperation

A-330 aircraft
(added September 1994)
GS commercial aircraft

. European Airbus
. . A–330 aircraft
jet aircraft
. European Airbus
. . A–330 aircraft
passenger aircraft
. European Airbus
. . A–330 aircraft
transport aircraft
. European Airbus
. . A–330 aircraft
RT ∞ aircraft
international cooperation

A–340 aircraft
(added September 1994)
GS commercial aircraft
. European Airbus
. . A–340 aircraft
jet aircraft
. European Airbus
. . A–340 aircraft
passenger aircraft
. European Airbus
. . A–340 aircraft
transport aircraft
. European Airbus
. . A–340 aircraft
RT ∞ aircraft
international cooperation

A2F aircraft
USE A–6 aircraft

A3D aircraft
USE A–3 aircraft

A3J aircraft
USE A–5 aircraft

A4D aircraft
USE A–4 aircraft

AABNCP
USE E–4A aircraft

AAP 1 mission
RT Apollo applications program
Apollo project
Skylab program

AAP 2 mission
RT Apollo applications program
Apollo project
Skylab program

AAP 3 mission
RT Apollo applications program
Apollo project
Skylab program

AAP 4 mission
RT Apollo applications program
Apollo project
Skylab program

abbreviations
(added December 1994)
UF *acronyms*
initialisms
RT alphabets
coding
dictionaries
symbols
terminology
words (language)

abdomen
GS anatomy
. abdomen
RT digestive system
gastrointestinal system
intestines
peritoneum
stomach
ventral sections
viscera

Abel function
GS analysis (mathematics)
. real variables
. . Abel function
functions (mathematics)
. Abel function
RT series (mathematics)

aberration
DEF In astronomy, the apparent angular displacement of the position of a celestial body in the direction of motion of the observer, caused by the combination of the velocity of the observer and the velocity of light. In optics, a specific deviation from perfect imagery, as, for example: spherical aberration, coma, astigmatism, curvature of field, and distortion.
RT abnormalities
asphericity
blurring
∞ coma
crystal optics
deviation
distortion
grazing incidence
spatial filtering

abilities
UF *proficiency*
skills
GS abilities
. aptitude
RT effort
human performance
transfer of training

abiogenesis
DEF The development of living organisms from lifeless matter.
GS evolution (development)
. biological evolution
. . abiogenesis
RT autocatalysis
chemical evolution
life sciences
panspermia
protobiology
spermatogenesis

ablated nosetips
USE PANT program

ablation
DEF The removal of surface material from a body by vaporization, melting, chipping, or other erosive process; specifically, the intentional removal of material from a nose cone or spacecraft during high speed movement through a planetary atmosphere to provide thermal protection to the underlying structure.
GS ablation
. laser ablation
RT ablative materials
ablative nose cones
aerodynamic heat transfer
aerodynamic heating
aerothermochemistry
atmospheric entry
burnthrough (failure)
charring
cooling
decomposition
erosion
gas–metal interactions
heat shielding
impingement
jet impingement
mass transfer
melting
pyrolysis
reentry
reentry effects
reentry physics
reentry shielding
sublimation
temperature effects
thermal absorption
thermal decomposition
vaporizing

ablative materials
DEF Materials, especially coating materials, designed to provide thermal protection to a body in a fluid stream through the loss of mass.
RT ablation
carbon–phenolic composites
cooling
heat shielding
heat sinks
∞ materials
nose cones
nozzle inserts
pyrolytic materials
refractory materials
temperature
thermal control coatings
thermal protection

ablative nose cones
GS cones
. nose cones
. . ablative nose cones
forebodies
. noses (forebodies)
. . nose cones
. . . ablative nose cones
RT ablation
heat shielding
reentry shielding
reentry vehicles
rocket nose cones
shielding

Ablestar launch vehicle
GS launch vehicles
. Ablestar launch vehicle
rocket vehicles
. multistage rocket vehicles
. . Ablestar launch vehicle
RT liquid propellant rocket engines

ABM
USE apogee boost motors

abnormalities
RT aberration
deviation
distortion
eccentricity
irregularities
uniqueness

aborigines
RT anthropology
human beings
inhabitants

abort apparatus
UF *flight termination systems*
GS safety devices
. **abort apparatus**
RT aborted missions
aircraft safety
arresting gear
∞ barriers
brakes (for arresting motion)
drag devices
ejection seats
∞ equipment
escape capsules
escape rockets
flying ejection seats

abort trajectories
GS trajectories
. **abort trajectories**
RT aborted missions
MATTS (systems)

aborted missions
RT abort apparatus
abort trajectories
destruction
engine failure
escape capsules
escape rockets
failure
malfunctions
∞ missions

abrasion
DEF The surface loss of a material due to frictional forces.
RT abrasives
chipping
cleaning
cutting
dry friction
erosion
files (tools)
friction
grinding (material removal)
lesions
metallography
polishing
scoring
soil erosion
tribology
wear
wear resistance

abrasion resistance
GS mechanical properties
. wear resistance
. . **abrasion resistance**
RT hardness
∞ resistance
toughness

abrasives
DEF Rocks, minerals, or other substances that, owing to their superior hardness, toughness, consistency, or other properties, are suitable for grinding, cutting, polishing, scouring, or similar use.
RT abrasion
aluminum oxides
Carborundum (trademark)
ceramics
diamonds
grit
paint removal
pumice
quartz
silicon carbides

Abrikosov theory
RT crystal structure
electromagnetic fields
horseshoe vortices
superconductivity
superconductors (materials)
∞ theories
vortices

absolute zero
DEF Temperature of –273.16 deg. C or –459.69 deg. F or 0 deg. K at which molecular motion vanishes and a body has no heat energy.
GS temperature
. **absolute zero**
RT cryogenic temperature
cryogenics
subzero temperature
temperature effects
temperature scales
zero point energy

absorbents
UF *molecular sieves*
GS sorbents
. **absorbents**
RT ∞ absorbers
absorbers (equipment)
absorbers (materials)
adsorbents
air conditioning equipment
desiccants
low density materials
material absorption
∞ materials

∞ **absorbers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT absorbents
absorbers (equipment)
absorbers (materials)
attenuators
cleaners
oscillation dampers
shock absorbers
vibration isolators

absorbers (equipment)
SN (EXCLUDES EQUIPMENT FOR ABSORBING ENERGY)
RT absorbents
∞ absorbers
absorbers (materials)
air conditioning equipment
cleaners
columns (process engineering)
condensers (liquefiers)
cooling systems
degassing
drying apparatus
∞ equipment
material absorption
refrigerating machinery
shock absorbers

absorbers (materials)
SN (EXCLUDES ABSORBENTS—LIMITED TO MATERIALS FOR ABSORBING RADIATION RATHER THAN OTHER MATERIALS)
GS **absorbers (materials)**
. neutron absorbers
. radar absorbers
. . antiradar coatings
. solar energy absorbers
RT absorbents
∞ absorbers
absorbers (equipment)
acoustic retrofitting
attenuators
cleaners
electromagnetic absorption
electromagnetic wave filters
energy absorption
∞ filters
heat sinks
insulation
jackets
low density materials
∞ materials
radiation shielding
refrigerants
shielding
sinks
stopping power
suppressors

absorptance
DEF The ratio of the radiant flux absorbed by a body to that incident upon it.
GS electromagnetic properties
. optical properties
. . **absorptance**
RT albedo
capture effect
cosmic ray albedo
density (mass/volume)
Earth albedo
electromagnetic absorption
light transmission
lunar albedo
microwave absorption
opacity
reflectance
surface properties
transmission
transmissivity
transmittance
transparence
turbidity

∞ **absorption**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The process by which radiant energy is absorbed and converted into other forms of energy. In general, the taking up or assimilation of one substance by another. In vacuum technology, gas entering the interior of a solid.
RT absorption cooling
absorption cross sections
absorption spectra
absorption spectroscopy
absorptivity
activated carbon
adsorption
atomic collisions
attenuation
auroral absorption
beneficiation
capture effect
collision parameters
cosmic ray albedo
damping
desorption
diffusion
drying
electromagnetic absorption
energy absorption
energy absorption films
gamma ray absorption
infrared absorption
infrared spectra
material absorption

materials recovery
microwave absorption
moderation (energy absorption)
molecular absorption
multiphoton absorption
permeating
photoabsorption
planetary atmospheres
polar cap absorption
radiation absorption
self absorption
sorption
sound transmission
thermal absorption
ultraviolet absorption
visible spectrum
x ray absorption

absorption bands
USE **absorption spectra**

absorption coefficient
USE **absorptivity**

absorption cooling
DEF Refrigeration in which cooling is effected by the expansion of liquid ammonia into gas and the absorption of the gas by water. The ammonia is reused after the water evaporates.
GS cooling
. **absorption cooling**
RT ∞ absorption
ammonia
magnetic cooling
refrigerants

absorption cross sections
DEF In radar, cross sections characterized by the amount of power removed from a beam by absorption of radio energy by a target to the power in the beam incident upon the target. Used for capture cross sections.
UF *capture cross sections*
RT ∞ absorption
∞ cross sections
ionization cross sections
neutron cross sections
radiation absorption
scattering cross sections
stopping power

absorption spectra
DEF Thin arrays of absorption lines and absorption bands which result from the passage of radiant energy from a continuous source through a selectively absorbing medium cooler than the source. Used for absorption bands and spectral absorption.
UF *absorption bands*
spectral absorption
GS spectra
. radiation spectra
. . **absorption spectra**
. . . Fraunhofer lines
. . . Herzberg bands
. . . telluric lines
. spectral bands
. . **absorption spectra**
. . . Fraunhofer lines
. . . Herzberg bands
. . . telluric lines
RT ∞ absorption
Balmer series
∞ bands
continuous radiation
D lines
differential absorption lidar
electromagnetic absorption
electromagnetic spectra
electron spectroscopy
electronic spectra
emission spectra
energy spectra
Fraunhofer line discriminators
galactic nuclei
gamma ray absorptiometry
H alpha line
H beta line
H gamma line
H lines
ionizing radiation
K lines
laser spectrometers
line spectra
microwave absorption
microwave spectra
molecular spectra
molecular spectroscopy
oscillator strengths
paramagnetic resonance
Paschen series
photoacoustic spectroscopy
photoluminescent bands
photon absorptiometry
Raman spectra
rotational spectra
Rydberg series
Schumann–Runge bands
self absorption
solar spectra
solar spectrometers
spectrum analysis
spin temperature
stellar spectra
symbiotic stars
ultraviolet spectra
visible spectrum

absorption spectroscopy
GS spectroscopy
. **absorption spectroscopy**
. . optogalvanic spectroscopy
RT ∞ absorption
Fraunhofer lines
infrared spectroscopy
optical equipment
optical measuring instruments
ultraviolet spectroscopy

absorptive index
USE **absorptivity**

absorptivity
DEF The capacity of a material to absorb incident radiant energy, measured as the absorptance of a specimen of material thick enough to be completely opaque, and having an optically smooth surface. Used for absorption coefficient and absorptive index.
UF *absorption coefficient*
absorptive index
GS electromagnetic properties
. optical properties
. . **absorptivity**
RT ∞ absorption
Beer law
Bouguer law
density (mass/volume)
electromagnetic absorption
Kirchhoff law of radiation
microwave absorption
opacity
oscillator strengths
photoacoustic spectroscopy
scattering coefficients
self absorption
transmissivity
transparence

abstracts
GS documents
. **abstracts**
summaries
. **abstracts**
RT annotations
bibliographies
indexes (documentation)
information retrieval
technical writing

abundance
DEF The mean concentration of an element in a geochemical reservoir, e.g., the abundance of Ni in meteorites or the crustal abundance of oxygen. Also used for the for relative average content, e.g., the order of abundance of elements in the Earth's crust is O, Si, AL, Fe, Ca, etc. Used for element abundance.
UF *element abundance*
RT availability
energy policy
geochemistry
metallic stars
metallicity
reserves
resources
stellar composition

AC (current)
USE **alternating current**

AC generators
DEF Generators for the production of alternating-current power. Used for alternating current generators and alternators (generators).
UF *alternating current generators*
alternators (generators)
GS electric generators
. **AC generators**
. . linear alternators
. . static alternators
RT compulsators
free-piston engines
∞ generators
rotating generators
turbogenerators

AC-1 aircraft
USE **DHC 4 aircraft**

accelerated life tests
DEF Methods designed to approximate, in a short time, the deteriorating effects under normal long-term service conditions.
RT acceptability
evaluation
fatigue life
life (durability)
performance tests
quality control
service life
∞ tests

accelerating agents
RT ∞ accelerators
admixtures
∞ agents
catalysts

retardants

∞ acceleration
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The time rate of change of velocity.
RT acceleration (physics)
acceleration protection
acceleration stresses (physiology)
∞ accelerators
angular acceleration
catalysis
electromagnetic acceleration
electron acceleration
gravimetry
high acceleration
high gravity environments
human tolerances
impact acceleration
particle acceleration
physiological acceleration
plasma acceleration
transverse acceleration

acceleration (physics)
DEF The rate of change of velocity. The act or process of accelerating or the state of being accelerated. Used for boost and G force.
UF *boost*
G force
GS rates (per time)
. **acceleration (physics)**
. . angular acceleration
. . deceleration
. . . spin reduction
. . electron acceleration
. . high acceleration
. . high gravity environments
. . impact acceleration
. . particle acceleration
. . plasma acceleration
. . transverse acceleration
RT ∞ acceleration
acceleration measurement
acceleration stresses (physiology)
accelerometers
body kinematics
expulsion
flight stress (biology)
∞ force
kinematics
kinetics
mechanical shock
∞ motion
physiological acceleration
stress (physiology)
thrust
thrust–weight ratio
velocity

acceleration measurement
(added April 1997)
SN (LIMITED TO TECHNIQUES AND INSTRUMENTATION FOR DETERMINING THE DIRECTION AND MAGNITUDE OF ACCELERATION; USE TERMS FROM THE "ACCELERATION (PHYSICS)" HIERARCHY TO INDICATE THE DATA OBTAINED FROM MEASUREMENT)
RT acceleration (physics)
accelerometers
angular acceleration
inertial navigation
∞ measurement
robot sensors
transverse acceleration
velocity measurement

acceleration protection
GS protection
. **acceleration protection**
RT ∞ acceleration
embedding
supine position

acceleration stresses (physiology)
GS stress (biology)
. **acceleration stresses (physiology)**
. . centrifuging stress
stress (physiology)
. **acceleration stresses (physiology)**
. . centrifuging stress
RT ∞ acceleration
acceleration (physics)
aerospace medicine
artificial gravity
body kinematics
gravitational effects
gravitational physiology
head movement
high acceleration
lower body negative pressure
motion sickness
physiological acceleration
transverse acceleration

acceleration tolerance
SN (LIMITED TO ABILITY OF ORGANISMS TO WITHSTAND ACCELERATION—FOR EFFECTS ON EQUIPMENT, USE SHOCK RESISTANCE AND MECHANICAL SHOCK)
GS tolerances (physiology)
. **acceleration tolerance**
RT blackout (physiology)
blackout prevention
centrifuging stress
gravitational effects
high acceleration
human centrifuges
human tolerances
∞ resistance

∞ accelerators
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Machines that ionize gases and electrically accelerate the ions onto targets.
RT accelerating agents
∞ acceleration
coaxial plasma accelerators
cyclic accelerators
Cyclops plasma accelerator
electron accelerators
geocyclotrons
Hall accelerators
hypervelocity guns
ion accelerators
linear accelerators
mass drivers
Nimrod accelerator
particle accelerator targets
particle accelerators
plasma accelerators
racetracks (particle accelerators)
railgun accelerators
ram accelerators
SEPAC (payload)
storage rings (particle accelerators)
synchrophasotrons
Van de Graaff accelerators

accelerometers
DEF Transducers which measure acceleration or gravitational forces capable of imparting acceleration.
GS measuring instruments
. **accelerometers**
. . strain gage accelerometers
RT acceleration (physics)
acceleration measurement
gravimeters
gravimetry
gyroscopic pendulums
mechanical measurement
pendulums
seismographs
shock measuring instruments
speed indicators
thrust measurement
velocity measurement
vibration meters

acceptability
UF *acceptance*
RT accelerated life tests
compatibility
evaluation
examination
figure of merit
inspection
performance tests
proving
quality control
rejection
reliability
risk
samples
standards
suitability
∞ tests
tolerances (mechanics)
total quality management
validity

acceptance
USE **acceptability**

acceptor materials
GS semiconductors (materials)
. **acceptor materials**
RT carrier density (solid state)
electrons
holes (electron deficiencies)
∞ materials

access control
DEF Hardware or software features, operating procedures, or management procedures designed to permit authorized access to a computer system.
RT communication networks
computer information security
∞ control
data transmission
multiple access
multiplexing
radio communication
telecommunication

access time
GS time
. **access time**
RT data processing
rates (per time)
time constant
∞ time response
transmission rate (communications)

accessories
UF *attachments*
RT ∞ components
extensions
fittings
inserts

subassemblies

accident investigation
GS investigation
. accident investigation
. . aircraft accident investigation
RT accidents
automobile accidents
wreckage

accident prevention
UF *precautions*
GS prevention
. accident prevention
RT accidents
aerospace safety
air bag restraint devices
automobile accidents
avoidance
fire prevention
hazards
protection
safety
safety devices
safety management
warning
warning systems

accident proneness
RT safety devices
safety factors

accidents
GS accidents
. aircraft accidents
. . bird-aircraft collisions
. automobile accidents
. loss of coolant
RT accident investigation
accident prevention
air bag restraint devices
crash injuries
crashes
destruction
disasters
emergencies
explosions
fires
first aid
hazards
industrial safety
injuries
sabotage
safety
safety devices
traffic
wreckage

acclimatization
DEF The adjustments of a human body or other organism to a new environment; the bodily changes which tend to increase efficiency and reduce energy loss. Used for deacclimatization.
UF *deacclimatization*
GS adaptation
. acclimatization
. . altitude acclimatization
. . cold acclimatization
. . heat acclimatization
RT homeostasis
liquid breathing
stress (biology)
stress (physiology)
tolerances (physiology)

accommodation
RT adaptation
correction
eye (anatomy)
focusing
visual accommodation

accommodation coefficient
DEF The ratio of the average energy actually transferred between a surface and impinging gas molecules which are scattered by the surface to the average energy which would theoretically be transferred if the impinging molecules reached complete thermal equilibrium with the surface before leaving the surface. Used for thermal accommodation coefficients.
UF *thermal accommodation coefficients*
GS coefficients
. accommodation coefficient
RT heat transfer coefficients

accounting
DEF The practice and system of recording and summarizing business and financial transactions, and reporting as well as verifying and analyzing their results.
RT budgeting
costs
finance

accretion
USE deposition

accretion disks
DEF Rotation disks of matter surrounding an astronomical object, such as a star, galactic nucleus, black hole, etc., which is accumulated gravitationally by the object.
RT astrophysics
binary stars
black holes (astronomy)
blazars
cooling flows (astrophysics)
disks (shapes)
eclipsing binary stars
galactic nuclei
gravitational binding energy
rotating disks
stellar mass accretion
x ray binaries

accumulations
RT acquisition
agglomeration
assemblies
coagulation
collection
concentrating
deposition
filling
growth
increasing
input
nucleation
settling
stockpiling

accumulators
DEF Devices or apparatus that accumulate or store. Used for collectors.
UF *collectors*
GS accumulators
. accumulators (computers)
. dust collectors
. solar collectors
RT anodes
concentrators
entrapment
fuel systems
pressure vessels
pressurizing

accumulators (computers)
DEF In computer technology, devices which store a number and upon receipt of another number add it to the number already stored and store the sum.
GS accumulators
. accumulators (computers)
computer components
. computer storage devices
. . registers (computers)
. . . accumulators (computers)
RT adding circuits
counters
∞ equipment

accuracy
DEF The degree of agreement of the measurements with the true value of the magnitude of the quantity measured. Used for error band and fidelity.
UF *error band*
fidelity
GS accuracy
. geodetic accuracy
. geometric accuracy
RT angular resolution
calibrating
consistency
correction
definition
drift (instrumentation)
dynamic characteristics
errors
high resolution
hysteresis
linearity
∞ measurement
miss distance
precision
quality
range errors
reliability
resolution
sequential control
standards
surveys
∞ tests
tolerances (mechanics)
validity
virtual properties

ACEE program
DEF A NASA program started in 1975 to reduce fuel consumption for transport aircraft through the study of structural and aerodynamic energy efficiency as well as engine energy efficiency consisting of engine component improvement, new energy efficient engines, and advanced turbopropellers. The acronym stands for aircraft energy efficiency. Used for Aircraft Energy Efficiency program and energy efficiency transport program.
UF *Aircraft Energy Efficiency program*
Energy Efficiency Transport program
GS programs
. NASA programs
. . ACEE program
RT aircraft engines
combustion efficiency

acetaldehyde
GS aldehydes
. acetaldehyde

acetals
GS ethers
. acetals

acetanilide
UF *phenacetin*
GS nitrogen compounds
. amides
. . acetanilide

acetates
GS acetates
. cobalt acetates
. lead acetates
. sodium chlorodifluoroacetates
. triacetin
RT acetic acid
acetylsalicylic acid
esters
ethylenediaminetetraacetic acids

acetation
USE acetylation

acetazolamide
GS nitrogen compounds
. amides
. . acetazolamide
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azoles
. . . . acetazolamide
RT carbonic anhydrase
diuretics

acetic acid
GS acids
. carboxylic acids
. . fatty acids
. . . acetic acid
. . . . ethylenediaminetetraacetic acids
. . . . iodoacetic acid
organic compounds
. carboxylic acids
. . fatty acids
. . . acetic acid
. . . . ethylenediaminetetraacetic acids
. . . . iodoacetic acid
RT acetates
acetyl compounds
triacetin

acetone
GS ketones
. acetone
RT acetylacetone
pentanone

acetonitrile
UF *ethane nitrile*
methyl cyanide
GS cyanides
. acetonitrile
methyl compounds
. acetonitrile
nitriles
. acetonitrile

acetyl compounds
GS organic compounds
. acetyl compounds
. . acetylacetone
. . acetylsalicylic acid
RT acetic acid
acetylation
aldehydes
∞ chemical compounds
esters

acetylacetone
GS ketones
. acetylacetone
organic compounds
. acetyl compounds
. . acetylacetone
RT acetone
pentanone

acetylation
DEF Substitution of an acetyl radical for an active hydrogen. Specifically, formation of cellulose acetate from cellulose. Used for acetation.
UF *acetation*
GS chemical reactions
. acylation
. . acetylation
RT acetyl compounds

acetylene
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkynes
. . . . acetylene
RT cyanoacetylene
hydrocarbon fuels
oxyacetylene

acetylsalicylic acid
UF *ASA*
GS acids
. carboxylic acids
. . fatty acids
. . . acetylsalicylic acid
organic compounds
. acetyl compounds
. . acetylsalicylic acid
. carboxylic acids
. . fatty acids
. . . acetylsalicylic acid
RT acetates
salicylates

achievement
RT completeness
goals
learning

achondrites
GS celestial bodies
. meteorites
. . stony meteorites
. . . achondrites
. . . . Bondoc meteorite
. . . . chassignites
. . . . Kapoeta achondrite
. . . . nakhlites
. . . . Norton County achondrite
. . . . shergottites
. . . . ureilites
RT chondrites
iron meteorites

acid base equilibrium
GS chemical equilibrium
. acid base equilibrium
RT ∞ equilibrium
homeostasis
pH
pH factor
stabilization
thermodynamic equilibrium

acid rain
DEF Low pH rainfall resulting from atmospheric reactions of aerosols containing chlorides and sulfates (or other negative ions).
GS precipitation (meteorology)
. rain
. . acid rain
RT air pollution
atmospheric chemistry
atmospheric moisture
clouds (meteorology)
dew
meteorology
pH
rainstorms
snow
sulfur oxides

acidity
GS chemical properties
. acidity
RT hydrogen ions
ion concentration
pH
titration

acidosis
DEF Reduction of alkali reserves due to an excess of acid metabolites.
RT alkalosis
hyperventilation
pH
pH factor
toxicity

acids
GS acids
. amino acids
. . alanine
. . . phenylalanine
. . aspartic acid
. . cysteine
. . dopa
. . folic acid
. . glutamic acid
. . glutamine
. . glycine
. . hippuric acid
. . histidine
. . leucine
. . . norleucine
. . lysine
. . melanoidin
. . methionine
. . thyroxine
. . tryptophan
. . tyrosine
. amoberbital
. ascorbic acid
. boric acids
. butyric acid
. carbonic acid
. carboxylic acids
. . acrylic acid
. . alanine
. . . phenylalanine
. . aspartic acid
. . citric acid
. . dicarboxylic acids
. . fatty acids
. . . acetic acid
. . . . ethylenediaminetetraacetic acids
. . . . iodoacetic acid
. . . acetylsalicylic acid
. . . benzilic acid
. . . benzoic acid
. . . lipoic acid
. . . oleic acid
. . . palmitic acid
. . . propionic acid
. . . sebacic acid
. . . valeric acid
. . folic acid

. . formhydroxamic acid
. . formic acid
. . Hexogenes (trademark)
. . lactic acid
. . lysine
. . nicotinic acid
. . oxalic acid
. . oxamic acids
. . tryptophan
. chromic acid
. cyanuric acid
. cytidylic acid
. hydrazoic acid
. hydrobromic acid
. hydrochloric acid
. hydrocyanic acid
. hydrofluoric acid
. nitric acid
. nucleic acids
. . deoxyribonucleic acid
. . ribonucleic acids
. oxidase
. perchloric acid
. phosphoric acid
. sulfonic acid
. sulfuric acid
. thymidine
. thymine
. uric acid
. uridylic acid
. xanthic acids
RT adrenocorticotropin (ACTH)
anhydrides
hydrogen compounds
inorganic compounds
∞ oxygen compounds

acoustic attenuation
GS attenuation
. wave attenuation
. . acoustic attenuation
. . . shock wave attenuation
RT acoustic coupling
acoustics
anechoic chambers
atmospheric attenuation
bioacoustics
grazing flow
noise reduction
sound amplification
wave propagation
zero sound

acoustic combustion
USE combustion stability

acoustic coupling
(added September 1988)
GS coupling
. acoustic coupling
RT acoustic attenuation
acoustic excitation
acoustics
energy transfer
sound waves
wave interaction

acoustic delay lines
DEF Devices used in a communications link or a computer memory in which the signal is delayed by the propagation of sound waves. Used for sonic waveguides.
UF *sonic waveguides*
GS delay lines
. acoustic delay lines
RT computer storage devices
delay circuits
surface acoustic wave devices
transmission lines

acoustic detection
USE sound detecting and ranging

acoustic ducts
GS ducts
. acoustic ducts
RT grazing flow
noise reduction
spatial marching

acoustic emission
DEF The stress and pressure waves generated during dynamic processes in materials and used in assessing structural integrity in machined parts.
GS emission
. acoustic emission
RT acoustic measurement
crack propagation
failure analysis
fatigue testing machines
nondestructive tests
stress waves

acoustic excitation
DEF The process of inducing vibration in a structure by exposure to sound waves.
GS excitation
. wave excitation
. . acoustic excitation
RT acoustic coupling
acoustic resonance
acoustics
sound amplification
surface noise interactions

acoustic fatigue
UF *sonic fatigue*
GS fatigue (materials)
. acoustic fatigue
RT acoustics

acoustic frequencies
UF *sound frequencies*
GS frequencies
. acoustic frequencies
. . audio frequencies
. . . quefrencies
RT acoustic measurement
acoustic properties
acoustic resonance
acoustics
frequency ranges
noise spectra
pressure oscillations
resonant frequencies
sound waves
subaudible frequencies
ultrasonic radiation
whispering gallery modes

acoustic generators
USE sound generators

acoustic imaging
(added February 1993)
GS imaging techniques
. acoustic imaging
. . acoustical holography
RT acoustic measurement
acoustic scattering
nondestructive tests
ultrasonic flaw detection

acoustic impedance
GS acoustic properties
. acoustic impedance
impedance
. acoustic impedance
RT acoustics
grazing flow

acoustic instability
GS acoustic properties
. acoustic instability
stability
. acoustic instability
RT signal fading

acoustic levitation
DEF Method by which molten materials in space are suspended during processing experiments in the low gravity environment. Also, the use of very intense sound waves to keep a body suspended, thereby eliminating any container contact.
GS levitation
. acoustic levitation
RT buoyancy
space processing

acoustic measurement
SN (MEASUREMENT OF PROPERTIES, QUANTITIES OR CONDITIONS ASSOCIATED WITH ELASTIC WAVES)
DEF Measurement of properties, quantities, or conditions of acoustical, i.e., mechanical waves. Used for sound measurement.
UF *sound measurement*
GS acoustic measurement
. noise measurement
RT acoustic emission
acoustic frequencies
acoustic imaging
ambience
anechoic chambers
audio frequencies
audiometry
cepstral analysis
effective perceived noise levels
frequency measurement
grazing flow
∞ measurement
mechanical measurement
noise meters
reverberation chambers
seismographs
sound pressure
sound waves
ultrasonic tests

acoustic microscopes
DEF Instruments which use acoustic radiation at microwave frequencies to allow visualization of microscopic detail exhibited in elastic properties of objects. Used for scanning laser acoustic microscope (SLAM).
UF *scanning laser acoustic microscope (SLAM)*
GS microscopes
. acoustic microscopes
RT acoustic propagation
imaging techniques
microwave frequencies
optical equipment
photoacoustic microscopy
wave propagation

acoustic nozzles
RT ∞ nozzles
sonic nozzles
sound generators

acoustic propagation
GS transmission

. wave propagation
. . acoustic propagation
. . . sound propagation
RT acoustic microscopes
acoustical holography
acoustics
elastic waves
∞ propagation
whispering gallery modes

acoustic properties
GS **acoustic properties**
. acoustic impedance
. acoustic instability
. acoustic scattering
. . reverberation
. acoustic velocity
. sound intensity
. . zero sound
RT acoustic frequencies
field strength
grazing flow
Lamb waves
mechanical properties
∞ physical properties
∞ properties
∞ resistance
sound waves
wave dispersion

acoustic radiation
USE **sound waves**

acoustic resonance
(added June 1997)
GS resonance
. acoustic resonance
RT acoustic excitation
acoustic frequencies
acoustics
resonant frequencies
resonant vibration

acoustic retrofitting
DEF Modification, especially of aircraft, to effect noise reduction; specifically, the introduction of absorber materials and jet noise silencers.
GS retrofitting
. acoustic retrofitting
RT absorbers (materials)
aerodynamic noise
aircraft design
aircraft noise
jet aircraft noise
mufflers
noise reduction
propeller noise
vibration isolators

acoustic scattering
GS acoustic properties
. acoustic scattering
. . reverberation
scattering
. wave scattering
. . acoustic scattering
. . . reverberation
RT acoustic imaging
acoustic sounding
acoustics
deep scattering layers
reciprocity theorem
sodar
sound detecting and ranging
surface noise interactions
underwater acoustics

acoustic simulation
GS simulation
. environment simulation
. . acoustic simulation
RT elastic waves
flight simulation
reverberation chambers

acoustic sounding
GS sounding
. acoustic sounding
RT acoustic scattering
acoustics
Earth atmosphere
meteorology
rocket sounding
rocket vehicles
sounding rockets
ultrasonic tests
underground acoustics
upper atmosphere

acoustic stability
USE **frequency stability**

acoustic streaming
DEF Unidirectional flow currents in a fluid that are due to the presence of sound waves.
RT fluid flow
fluid switching elements
fragmentation
sound waves
streamlining

acoustic velocity
DEF The speed of propagation of sound waves. Used for sonic speed, sound barrier, and sound velocity.
UF *sonic speed*
sound barrier
sound velocity
GS acoustic properties
. acoustic velocity
rates (per time)
. acoustic velocity
velocity
. acoustic velocity
RT ∞ barriers
exhaust velocity
Gutenberg zone
Mach cones
Mach number
sonic booms
sound pressure
subsonic speed
supersonic speed
transonic speed

acoustic vibrations
USE **sound waves**

acoustical holography
UF *sonoholography*
sound holography
GS imagery
. photography
. . holography
. . . acoustical holography
imaging techniques
. acoustic imaging
. . acoustical holography
RT acoustic propagation
imaging techniques
sound waves
wave front reconstruction

acoustics
DEF The study of sound, including its production, transmission, and effects. Those qualities of an enclosure that together determine its character with respect to distinct hearing. Used for sound.
UF *sound*
GS **acoustics**
. aeroacoustics
. bioacoustics
. electroacoustics
. geometrical acoustics
. magnetoacoustics
. microsonics
. psychoacoustics
. underwater acoustics
RT acoustic attenuation
acoustic coupling
acoustic excitation
acoustic fatigue
acoustic frequencies
acoustic impedance
acoustic propagation
acoustic resonance
acoustic scattering
acoustic sounding
anechoic chambers
architecture
audio tapes
auditory perception
auditory stimuli
auditory tasks
comfort
earphones
echoes
effective perceived noise levels
elastic waves
harmonic excitation
harmonic generations
harmonic oscillation
harmonics
hum
infrasonic frequencies
Lamb waves
Lame wave equations
loudness
noise (sound)
noise pollution
noise propagation
noise reduction
octaves
opacity
phonetics
power spectra
∞ science
simple harmonic motion
sonic anemometers
sound amplification
sound fields
sound propagation
sound transmission
sound waves
speech
stereophonics
ultrasonic cleaning
ultrasonic scanners
ultrasonics
verbal communication
vibration
vibration damping
voice communication
zero sound

acousto-optics
RT Bragg cells
crystal optics

electro-optics
geometrical optics
imagery
light modulators
magneto-optics
optical properties
optical switching
∞ optics
photoacoustic microscopy
photoacoustic spectroscopy
tunable filters

ACPL (Spacelab)
USE **Atmospheric Cloud Physics Lab (Spacelab)**

acquired immunodeficiency syndrome
(added August 1991)
DEF A condition caused by the human immunodeficiency virus (HIV) attacking the human body's T-cells, thereby rendering an infected individual defenseless against diseases.
UF *AIDS (disease)*
GS **diseases**
. **infectious diseases**
. . **viral diseases**
. . . **acquired immunodeficiency syndrome**
signs and symptoms
. **acquired immunodeficiency syndrome**
RT **antibodies**
hepatitis
human immunodeficiency virus
immune systems
immunology
interferon
meningitis
physiological defenses
pneumonia
vaccines

acquisition
GS **acquisition**
. **data acquisition**
. **target acquisition**
RT **accumulations**
collection
detection
documentation
∞ **receiving**
recognition

acriflavine
GS **organic compounds**
. **cyclic compounds**
. . **heterocyclic compounds**
. . . **acriflavine**
RT **antiseptics**
dyes

acrobatics (aircraft)
USE **aerobatics**

acrolein
GS **aldehydes**
. **acrolein**
RT **toxicity and safety hazard**

acronyms
USE **abbreviations**

ACRV
USE **Assured Crew Return Vehicle**

acrylates
GS **esters**
. **acrylates**
RT **resins**

acrylic acid
GS **acids**
. **carboxylic acids**
. . **acrylic acid**
organic compounds
. **carboxylic acids**
. . **acrylic acid**

acrylic resins
UF *methacrylate resins*
polyacrylates
GS **plastics**
. **synthetic resins**
. . **addition resins**
. . . **acrylic resins**
resins
. **synthetic resins**
. . **addition resins**
. . . **acrylic resins**
RT **latex**
polyacrylonitrile
thermoplastic resins

acrylonitriles
UF *vinyl cyanide*
GS **nitriles**
. **acrylonitriles**
. . **polyacrylonitrile**
RT **plastics**

ACTH
USE **adrenocorticotropin (ACTH)**

actinide series
DEF The series of elements beginning with actium, Element No. 89, and continuing through lawrencium, Element No. 103.
GS **chemical elements**
. **actinide series**
. . **actinium**
. . **radium**
. . . **radium isotopes**
. . . . **radium 226**
. . **thorium**
. . . **thorium isotopes**
. . **transuranium elements**
. . . **americium**
. . . . **americium isotopes**
. . . . . **americium 241**
. . . **berkelium**
. . . **californium**
. . . . **californium isotopes**
. . . **curium**
. . . . **curium isotopes**
. . . . . **curium 242**
. . . . . **curium 244**
. . . **einsteinium**
. . . **fermium**
. . . **lawrencium**
. . . **mendelevium**
. . . **neptunium**
. . . . **neptunium isotopes**
. . . **nobelium**
. . . **plutonium**
. . . . **plutonium isotopes**
. . . . . **plutonium 238**
. . . . . **plutonium 239**
. . . . . **plutonium 240**
. . . . . **plutonium 241**
. . . . . **plutonium 244**
. . . **sergenium**
. . **uranium**
. . . **uranium isotopes**
. . . . **uranium 232**
. . . . **uranium 233**
. . . . **uranium 234**
. . . . **uranium 235**
. . . . **uranium 238**
metals
. **actinide series**
. . **actinium**
. . **radium**
. . . **radium isotopes**
. . . . **radium 226**
. . **thorium**
. . . **thorium isotopes**
. . **transuranium elements**
. . . **americium**
. . . . **americium isotopes**
. . . . . **americium 241**
. . . **berkelium**
. . . **californium**
. . . . **californium isotopes**
. . . **curium**
. . . . **curium isotopes**
. . . . . **curium 242**
. . . . . **curium 244**
. . . **einsteinium**
. . . **fermium**
. . . **lawrencium**
. . . **mendelevium**
. . . **neptunium**
. . . . **neptunium isotopes**
. . . **nobelium**
. . . **plutonium**
. . . . **plutonium isotopes**
. . . . . **plutonium 238**
. . . . . **plutonium 239**
. . . . . **plutonium 240**
. . . . . **plutonium 241**
. . . . . **plutonium 244**
. . . **sergenium**
. . **uranium**
. . . **uranium isotopes**
. . . . **uranium 232**
. . . . **uranium 233**
. . . . **uranium 234**
. . . . **uranium 235**
. . . . **uranium 238**
RT **radioactive isotopes**
radioactive materials
transition metals

actinide series compounds
GS **actinide series compounds**
. **californium compounds**
. **curium compounds**
. **einsteinium compounds**
. **neptunium compounds**
. **plutonium compounds**
. . **plutonium fluorides**
. . **plutonium oxides**
. **thorium compounds**
. . **thorium fluorides**
. . **thorium oxides**
. **uranium compounds**
. . **uranium carbides**
. . **uranium fluorides**
. . **uranium oxides**
RT ∞ **chemical compounds**
Group 3B compounds

actinium
GS **chemical elements**
. **actinide series**
. . **actinium**
metals
. **actinide series**
. . **actinium**

actinographs
USE **actinometers**

actinometers
DEF The general name for instruments used to measure the intensity of radiant energy, particularly that of the sun. Used for actinographs and emissographs.
UF *actinographs*
emissographs
GS measuring instruments
. radiation measuring instruments
. . **actinometers**
. . . infrared spectrometers
. . . . filter wheel infrared spectrometers
. . . pyranometers
. . . radiometers
. . . . Dicke radiometers
. . . . infrared detectors
. . . . . FLIR detectors
. . . . . infrared radiometers
. . . . . Advanced Very High Resolution Radiometer
. . . . . infrared scanners
. . . . . visible infrared spin scan radiometer
. . . . microwave radiometers
. . . . . Advanced Microwave Sounding Unit
. . . . passive L-band radiometers
. . . . pressure modulator radiometers
. . . . spectroradiometers
. . . solar spectrometers
. . . spectroheliographs
. . . spectrophotometers
. . . . infrared spectrophotometers
. . . . ultraviolet spectrophotometers
. . . ultraviolet detectors
. . . . ultraviolet spectrometers
. . . . . high dispersion spectrographs
. . . . . Total Ozone Mapping Spectrometer
. . . . ultraviolet spectrophotometers
. . . x ray detectors
RT dosimeters
Fabry-Perot spectrometers
field intensity meters
spectrometers

actinomycetes
GS microorganisms
. bacteria
. . **actinomycetes**

actinomycin
GS drugs
. antibiotics
. . **actinomycin**

activated carbon
GS charcoal
. **activated carbon**
RT ∞ absorption
carbon
filtration
hemoperfusion
water treatment

activated sludge
DEF A semiliquid mass removed from the liquid flow of sewage and subjected to aeration and aerobic microbial action. The end product is dark to golden brown, partially decomposed, granular and flocculent, and has an earthy odor when fresh.
GS **sludge**
. **activated sludge**
RT biodegradation
human wastes
metabolic wastes
sewage
wastes

activation
RT actuation
catalysis
deactivation
electromagnetic absorption
excitation
flotation
initiation
ionization potentials
irradiation
microwave absorption
sensitizing
starting
stimulation

activation (biology)
RT activation energy
∞ biology
∞ cells
enzymes
stimulation

activation analysis
DEF A method of chemical analysis, especially for small traces of materials, based on the detection of characteristic radiations following a nuclear bombardment.
GS **activation analysis**
. neutron activation analysis
RT ∞ analyzing

activation energy
RT activation (biology)
binding energy
Damkohler number
electron energy
∞ energy
heat
nuclear binding energy
nuclear capture
proton energy
rotons
surface energy

active control
DEF The automatic activation of various control surface functions in aircraft.
GS automatic control
. adaptive control
. . **active control**
RT aeroservoelasticity
aircraft control
∞ control
interactive control
self adaptive control systems
self alignment
servomechanisms
smart structures

active galactic nuclei
GS galactic nuclei
. **active galactic nuclei**
RT active galaxies
blazars
galactic radiation
∞ nuclei
quasars
radio galaxies
Seyfert galaxies

active galaxies
GS celestial bodies
. galaxies
. . active galaxies
. . . Markarian galaxies
. . . radio galaxies
. . . Seyfert galaxies
RT active galactic nuclei
blazars
galactic nuclei
galactic radiation
quasars

active glaciers
USE **glaciers**

Active Magneto Particle Tracer Explorers
USE **AMPTE (satellites)**

active satellites
DEF Satellites which transmit a signal, in contrast to passive satellites.
GS artificial satellites
. **active satellites**
. . SYNCOM satellites
. . . Early Bird satellites
. . . SYNCOM 1 satellite
. . . SYNCOM 2 satellite
. . . SYNCOM 3 satellite
. . . SYNCOM 4 satellite
RT Advent Project
Explorer 29 satellite
Explorer 36 satellite
geodetic satellites
GEOS 1 satellite
GEOS 2 satellite
GEOS 3 satellite
navigation satellites
NAVSTAR satellites
passive satellites
synchronous satellites

active volcanoes
USE **volcanoes**

∞ **activity**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT activity (biology)
extravehicular activity
faculae
intravehicular activity
radioactivity
solar activity

activity (biology)
UF *biological activity*
RT ∞ activity
biological effects
∞ biology
catalytic activity

activity cycles (biology)
GS cycles
. **activity cycles (biology)**
RT ∞ biology
circadian rhythms
phenology
rhythm (biology)

ACTS
SN (ADVANCED COMMUNICATIONS TECHNOLOGY SATELLITE)
UF *Advanced Communications Technology Sat*
GS artificial satellites
. communication satellites
. . **ACTS**
RT extremely high frequencies
microwave transmission
satellite communication

actuation
RT activation
actuators
excitation
initiation
nutation
sensitizing
starting
stimulation

actuator disks
GS disks (shapes)
. actuator disks
RT ∞ disks
∞ fans
propellers

actuators
DEF Mechanisms to activate process control equipment, e.g., valves. Used for cartridge actuated devices, hydraulic actuators, and triggers.
UF *cartridge actuated devices*
hydraulic actuators
triggers
RT actuation
aeroservoelasticity
aircraft hydraulic systems
automatic control valves
cams
control valves
controllers
∞ effectors
explosive devices
∞ instruments
missile control
propellant actuated instruments
regulators
servomechanisms
servomotors
shape control
solenoids
starters
stepping motors
torque motors

acuity
DEF The keenness of ability to detect and discriminate.
GS acuity
. visual acuity
. . hyperopia
RT adaptation
discrimination
frequency response
perception
sensitivity
thresholds (perception)

acylation
GS chemical reactions
. acylation
. . acetylation
RT Friedel–Craft reaction

AD–A satellite
USE **Explorer 19 satellite**

AD/ B
USE **Explorer 25 satellite**

AD/ satellite
USE **Explorer 24 satellite**

Ada (programming language)
DEF A programming language based on PASCAL, originally developed on behalf of the US Department of Defense for use in embedded computer systems. It is named Ada in honor of Augusta Ada Byron, countess of Lovelace, primarily due to the fact that she was the assistant and patrun of Charles Babbage and is considered the world's first programmer.
GS languages
. programming languages
. . high level languages
. . . **Ada (programming language)**
RT computer programming
embedded computer systems
object–oriented programming

adaptation
DEF The adjustment, alteration or modification of an organism to fit it more perfectly for existence in its environment.
GS **adaptation**
. acclimatization
. . altitude acclimatization
. . cold acclimatization
. . heat acclimatization
. desert adaptation
. retinal adaptation
. . dark adaptation
. . light adaptation
RT accommodation
acuity
correction
fitting
hibernation
homeostasis
perception
reaction time
retraining
sensitivity
thresholds (perception)
vision

adapters
DEF Devices or contrivances used or designed primarily to fit or adjust one thing to another. Devices, appliances or the like used to alter something so as to make it suitable for a use for which it was not originally designed.
GS **adapters**
. multiple docking adapters
RT connectors
extensions
fittings
joints (junctions)

adaptive control
UF *adaptive control systems*
GS automatic control
. **adaptive control**
. . active control
. . model reference adaptive control
. . self adaptive control systems
RT automata theory
autonomy
∞ control
control theory
cybernetics
dynamic control
feedback control
feedforward control
machine learning
mission adaptive wings
optimal control
robot control
sampled data systems
self alignment
smart structures

adaptive control systems
USE **adaptive control**

adaptive filters
RT bandpass filters
bandstop filters
electric filters
electromagnatic wave filters
∞ filters
linear filters
optical filters
tracking filters
tunable filters

adaptive optics
DEF Real–time optical correction for atmospheric perturbations and other system error sources.
RT atmospheric optics
computer techniques
feedback control
honeycomb mirrors
imaging techniques
instrument compensation
laser guide stars
optical correction procedure
optical transfer function
∞ optics
segmented mirrors
self adaptive control systems

adders (circuits)
USE **adding circuits**

adding circuits
UF *adders (circuits)*
binary summators
GS circuits
. **adding circuits**
computer components
. **adding circuits**
RT accumulators (computers)
binary integration
logic circuits

addition
RT addition theorem
amount
arithmetic
computation
number theory
restoration

addition resins
SN (CARBON CHAIN POLYMERS—FOR HETEROATOM CHAIN POLYMERS, USE POLYETHER RESINS)
GS plastics
. synthetic resins
. . **addition resins**
. . . acrylic resins
. . . vinyl copolymers
resins
. synthetic resins
. . **addition resins**
. . . acrylic resins
. . . vinyl copolymers
RT crosslinking
polybutadiene
polyethylene terephthalate
polyethylenes
polyisobutylene
polypropylene
polystyrene
polyvinyl alcohol
polyvinyl chloride
synthesis (chemistry)
synthetic fibers
vulcanized elastomers

addition theorem
GS number theory

. addition theorem
theorems
. addition theorem
RT addition

additives
DEF Materials or substances added to something else for a specific purpose. Used for doping (additives).
UF *doping (additives)*
GS additives
. admixtures
. antifreezes
. antiicing additives
. antiknock additives
. antioxidants
. oil additives
. opacifiers
. plasticizers
. propellant additives
. . propellant binders
. . . solid rocket binders
RT ∞ agents
alloying
antimisting fuels
binders (materials)
carrier injection
catalysts
coatings
diluents
dopes
fillers
high energy fuels
inhibitors
interstitials
lubricants
majority carriers
minority carriers
modulation doping
neutralizers
pigments
preservatives
retardants
solvents
stabilizers (agents)
suppressors
tetrahydrofuran
thickeners (materials)
traveling solvent method
vinyl copolymers

addressing
RT coding
computer programming

adducts
DEF Chemical compounds with weak bonds, e.g., occlusive or Van der Waal bonds.
RT ∞ chemical compounds

Aden
USE Southern Yemen

adenines
GS bases (chemical)
. adenines
organic compounds
. carbohydrates
. . glucosides
. . . nucleosides
. . . . adenines
. cyclic compounds
. . heterocyclic compounds
. . . purines
. . . . adenines
. nucleotides
. . adenines
phosphorus compounds
. phosphates
. . adenines
RT ribonucleic acids

adenosine diphosphate
UF *ADP*
GS organic compounds
. coenzymes
. . adenosine diphosphate
. cyclic compounds
. . heterocyclic compounds
. . . adenosines
. . . . adenosine diphosphate
. nucleotides
. . adenosines
. . . adenosine diphosphate
phosphorus compounds
. phosphates
. . diphosphates
. . . adenosine diphosphate

adenosine triphosphate
UF *ATP*
GS organic compounds
. coenzymes
. . adenosine triphosphate
. cyclic compounds
. . heterocyclic compounds
. . . adenosines
. . . . adenosine triphosphate
. nucleotides
. . adenosines
. . . adenosine triphosphate
phosphorus compounds
. phosphates
. . adenosine triphosphate
RT amino acids

adenosines
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . adenosines
. . . . adenosine diphosphate
. . . . adenosine triphosphate
. . . . cyclic AMP
. nucleotides
. . adenosines
. . . adenosine diphosphate
. . . adenosine triphosphate
. . . cyclic AMP

adenoviruses
GS microorganisms
. viruses
. . adenoviruses

adequacy
RT quality
validity

adherometers
USE adhesion tests

adhesion
GS surface properties
. adhesion
RT adhesion tests
adhesive bonding
agglutination
bonding
cold welding
fusion (melting)
interfacial energy
internal pressure
∞ joining
metal bonding
peeling
sealing
spreading
tackiness
traction
wettability

adhesion tests
UF *adherometers*
Fokker bond testers
RT adhesion
bonding
nondestructive tests
∞ tests
wettability

adhesive bonding
GS bonding
. adhesive bonding
RT adhesion
agglutination
bonded joints
cementation
fiber pullout
∞ joining
metal bonding
metal–metal bonding
resin bonding
sealing

adhesives
UF *binders (adhesives)*
GS adhesives
. glues
. pastes
. tetraethyl orthosilicate
RT agglutination
alkyd resins
binders (materials)
cements
epoxy resins
fasteners
furan resins
joints (junctions)
metal–metal bonding
phenolic epoxy resins
plastic tapes
sealers
seams (joints)
∞ tapes

ADI methods
USE alternating direction implicit methods

adiabatic conditions
GS conditions
. adiabatic conditions
RT Carnot cycle
compressing
enthalpy
environments
expansion
isentrope
isoenergetic processes
isothermal processes
polytropic processes
temperature
thermal environments
thermodynamic cycles
thermodynamic equilibrium

adiabatic demagnetization cooling
DEF Use of paramagnetic salts cooled to the boiling point of helium in a strong magnetic field, then thermally isolated and removed from the field

to demagnetize the salts and attain temperatures of 10(–3) K.
RT magnetic cooling

adiabatic equations
RT∞ equations
equations of state
heat transmission
nonadiabatic theory
shock waves

adiabatic flow
GS fluid flow
. adiabatic flow
RT stagnation temperature

adipose tissues
GS tissues (biology)
. adipose tissues
RT connective tissue
fats

Adiprene (trademark)
GS elastomers
. rubber
. . synthetic rubbers
. . . Adiprene (trademark)

Adirondack Mountains (NY)
GS landforms
. mountains
. . Adirondack Mountains (NY)
RT New York

adjoints
GS algebra
. vector spaces
. . matrices (mathematics)
. . . adjoints
RT data processing
numerical analysis

adjusting
UF *adjustment*
readjustment
RT alignment
clearances
collimation
correction
fitting
focusing
leveling
matching
optical correction procedure
positioning
revisions
∞ setting
smoothing

adjustment
USE **adjusting**

administration
USE **management**

admittance
USE **electrical impedance**

admixtures
GS additives
. admixtures
mixtures
. admixtures
RT accelerating agents
catalysts
∞ combination
concretes
formulations
ingredients
mixers
monars (material)
surfactants

adobe flats
USE **flats (landforms)**

ADP
USE **adenosine diphosphate**

Adrastea
(added January 1996)
DEF A natural satellite of Jupiter orbiting at a mean distance of 129,980 kilometers.
GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . Adrastea
RT Jupiter (planet)

adrenal gland
GS anatomy
. glands (anatomy)
. . endocrine glands
. . . adrenal gland
RT adrenocorticotropin (ACTH)
epinephrine

adrenal metabolism
GS metabolism
. adrenal metabolism
RT aldosterone
corticosteroids
cortisone
hydroxycorticosteroid

adrenaline
USE **epinephrine**

adrenergics
UF *sympathomimetics*
GS drugs
. adrenergics
RT antiadrenergics
anticoagulants
cyclic AMP

adrenocorticotropin (ACTH)
UF *ACTH*
GS secretions
. endocrine secretions
. . hormones
. . . pituitary hormones
. . . . adrenocorticotropin (ACTH)
RT acids
adrenal gland
amino acids
proteins

Adriatic Sea
GS seas
. Mediterranean Sea
. . Adriatic Sea
RT Italy
Yugoslavia

adsorbents
DEF Materials which take up gases by adsorption.
GS sorbents
. adsorbents
RT absorbents
adsorption
air conditioning equipment
charcoal
desiccants
hemoperfusion

adsorption
DEF The adhesion of a thin film of liquid or gas to the surface of a solid substance. The solid does not combine chemically with the adsorbed substance.
GS sorption
. adsorption
. . chemisorption
RT∞ absorption
adsorbents
adsorptivity
beneficiation
chromatography
concentrating
desorption
diffusion
electrostatic precipitators
elution
gas chromatography
gas–metal interactions
Gibbs adsorption equation
∞ separation
water treatment

adsorptivity
GS surface properties
. adsorptivity
RT adsorption
chemical properties
chemisorption
∞ physical properties

Advanced Airborne Command Post
USE **E–4A aircraft**

Advanced Communications Technology Sat
USE **ACTS**

Advanced EVA Protection Systems
USE **AEPS**

Advanced Launch System (STS)
(added October 1989)
UF *ALS (launch system)*
GS transportation
. space transportation
. . space transportation system
. . . Advanced Launch System (STS)
RT heavy lift launch vehicles
launch vehicle configurations
launch vehicles
NASA programs
NASA space programs
payload delivery (STS)
reusable launch vehicles
Shuttle Derived Vehicles
space shuttles
spacecraft design

Advanced Microwave Sounding Unit
(added July 1997)
DEF A line–scan instrument on the Advanced TIROS–N (ATN) NOAA K–N series of operational meteorological satellites. The AMSU consists of two functionally independent units, AMSU–A and AMSU–B. The AMSU–A is designed to measure scene radiance in 15 channels, ranging from 23.8 to 89 GHz, to derive atmospheric temperature profiles from the Earth surface to about 3 millibar pressure height. The AMSU–B is designed to measure scene radiance in five channels, ranging from 89 GHz to 183 GHz for the computation of atmospheric water vapor profiles.
UF *AMSU (radiometer)*
GS measuring instruments
. microwave sensors
. . Advanced Microwave Sounding Unit
. radiation measuring instruments
. . actinometers
. . . radiometers

. . . . microwave radiometers
. . . . . **Advanced Microwave Sounding Unit**
. satellite-borne instruments
. . **Advanced Microwave Sounding Unit**
microwave equipment
. microwave radiometers
. . **Advanced Microwave Sounding Unit**
RT atmospheric moisture
atmospheric sounding
atmospheric temperature
Earth Observing System (EOS)
microwave sounding
NOAA satellites
remote sensors
satellite sounding
TIROS N series satellites

Advanced Orbiting Solar Observatory
USE **AOSO**

Advanced Range Instrumentation Aircraft
DEF An EC-135 aircraft configured for reception recording and real-time relay of telemetry data.
RT airborne equipment
∞ aircraft
Apollo project
C-135 aircraft
data acquisition
telemetry

Advanced Range Instrumentation Ship
UF *ARIS instrumentation ship*
GS water vehicles
. ships
. . **Advanced Range Instrumentation Ship**
RT ∞ instruments
manned space flight network
spacecraft tracking
tracking networks

Advanced Reconn Electric Spacecraft
UF *ARES (spacecraft)*
GS interplanetary spacecraft
. Mars probes
. . **Advanced Reconn Electric Spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Advanced Reconn Electric Spacecraft**
RT ∞ spacecraft

advanced sodium cooled reactor
UF *ASCR reactor*
GS nuclear reactors
. liquid cooled reactors
. . liquid metal cooled reactors
. . . **advanced sodium cooled reactor**

Advanced Solid Rocket Motor (STS)
(added October 1989)
UF *ASRM (STS)*
GS engines
. rocket engines
. . booster rocket engines
. . . Space Shuttle Boosters
. . . . **Advanced Solid Rocket Motor (STS)**
. . solid propellant rocket engines
. . . Space Shuttle Boosters
. . . . **Advanced Solid Rocket Motor (STS)**
RT Space Shuttle Ascent Stage
space transportation system

advanced tactical fighter
USE **F-22 aircraft**

Advanced Technology Laboratory
DEF An all-pallet payload utilizing the Space Shuttle and the European Spacelab and designed to accommodate 8 to 15 experiments per mission.
GS laboratories
. space laboratories
. . **Advanced Technology Laboratory**
payloads
. Space Shuttle payloads
. . **Advanced Technology Laboratory**
RT Spacelab

Advanced Technology Light Twin aircraft
USE **ATLIT project**

advanced test reactors
UF *ATR reactor*
GS nuclear reactors
. nuclear research and test reactors
. . **advanced test reactors**

Advanced Very High Resolution Radiometer
(added July 1988)
DEF A five channel scanning instrument that quantitatively measures electromagnetic radiation.
UF *AVHRR*
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . infrared detectors
. . . . . infrared radiometers
. . . . . **Advanced Very High Resolution Radiometer**
. . infrared instruments
. . . infrared detectors
. . . . infrared radiometers
. . . . . **Advanced Very High Resolution Radiometer**
. satellite-borne instruments
. . **Advanced Very High Resolution Radiometer**
RT infrared instruments
NOAA 6 satellite
NOAA 7 satellite
NOAA 8 satellite
NOAA 11 satellite
NOAA 12 satellite
remote sensors
TIROS N series satellites

Advanced Vidicon Camera System (AVCS)
UF *AVCS*
GS communication equipment
. **Advanced Vidicon Camera System (AVCS)**
television systems
. **Advanced Vidicon Camera System (AVCS)**
RT ∞ systems
video equipment
vidicons

Advanced X Ray Astrophysics Facility
USE **X Ray Astrophysics Facility**

advancing glaciers
USE **glaciers**

advancing shorelines
USE **beaches**

advection
DEF The process of transport of an atmospheric property solely by the mass motion of the atmosphere; also, the rate of change of the value of the advected property at a given point.
RT atmospheric circulation
convection
heat transfer
mixing layers (fluids)
Peclet number

Advent Project
GS programs
. projects
. . **Advent Project**
RT active satellites
communication satellites
Courier satellite
Relay satellites

AE-A satellite
USE **Explorer 17 satellite**

AE-B satellite
USE **Explorer 32 satellite**

AE-C satellite
USE **Explorer 51 satellite**

AE-D satellite
USE **Explorer 54 satellite**

AE-E satellite
USE **Explorer 55 satellite**

aeolian tones
RT elastic waves
frequencies
Karman vortex street
noise (sound)
sound waves
wind (meteorology)

aeolotropism
GS tropism
. **aeolotropism**
RT anisotropy

AEPS
UF *Advanced EVA Protection Systems*
GS support systems
. life support systems
. . emergency life sustaining systems
. . . **AEPS**
. . portable life support systems
. . . **AEPS**
RT Columbus space station
extravehicular activity
lunar bases
Mars landing
oxygen supply equipment
space shuttles
space stations
survival equipment

aeration
RT agitation
beneficiation
blowing
bubbles
corrosion prevention
degassing
dissolved gases
dissolving
entrainment
mixers
mixing
oxygenation

purification
∞ separation
spraying
stirring
suspending (mixing)
water treatment

aerial acrobatics
USE **aerobatics**

aerial explosions
SN (LIMITED TO EXPLOSIONS OCCURRING AT HEIGHTS LESS THAN 50 KM)
UF *air blasts*
GS explosions
. **aerial explosions**
RT blast loads
chemical explosions
nuclear explosions
thermonuclear explosions

aerial imagery
USE **aerial photography**

aerial photography
UF *aerial imagery*
GS imagery
. photography
. . **aerial photography**
RT astronomical photography
change detection
cloud photographs
cloud photography
color photography
Earth observations (from space)
Earth Resources Survey aircraft
forest fire detection
geographic information systems
gray scale
ground truth
ice mapping
image motion compensation
infrared photography
orthophotography
photogeology
photogrammetry
photointerpretation
photomapping
photomaps
pixels
plant stress
rocket-borne photography
satellite-borne photography
sea truth
spaceborne photography
stereophotography
timber inventory
ultraviolet photography

aerial reconnaissance
GS reconnaissance
. **aerial reconnaissance**
. . Airborne Integrated Reconnaissance System
RT aeromagnetism
change detection
Earth Resources Survey aircraft
ground truth
HS-801 aircraft
infrared radiometers
meteorological flight
photoreconnaissance
reconnaissance aircraft
reconnaissance spacecraft
thermal mapping

aerial rudders
GS airfoils
. **aerial rudders**
control surfaces
. rudders
. . **aerial rudders**
RT fins
horizontal tail surfaces
marine rudders
stabilizers (fluid dynamics)
tabs (control surfaces)
tail assemblies

aeroacoustics
GS acoustics
. **aeroacoustics**
RT **aerodynamics**
∞ aeronautics
aircraft noise
grazing flow
noise prediction (aircraft)
propeller noise
∞ science
surface noise interactions

aeroassist
DEF Changing orbit size by utilizing aerobraking, aerocapture, or aeromaneuvering.
RT **aerobraking**
aerocapture
aeromaneuvering
atmospheric entry
interplanetary transfer orbits
transfer orbits

aerobatics
UF *acrobatics (aircraft)*
aerial acrobatics
stunt flying
RT flight control
maneuvers

Aerobee rocket vehicle
GS rocket vehicles
. sounding rockets
. . **Aerobee rocket vehicle**

aerobes
RT anaerobes
bacteria
microorganisms
sewage treatment

aerobiology
DEF The study of the distribution of living organisms freely suspended in the atmosphere.
RT air pollution
airborne infection
∞ biology
environment pollution
pollen

aerobraking
DEF Changing orbit size by using the upper atmosphere to create drag.
RT **aeroassist**
aerocapture
aeromaneuvering
interplanetary transfer orbits
transfer orbits

aerocapture
DEF Making use of the atmosphere of a planet or planetary satellite by capturing the object and reducing the orbit size so that it remains in orbit or lands on the body.
RT **aeroassist**
aerobraking
aeromaneuvering
atmospheric entry
interplanetary transfer orbits
transfer orbits

aerodontalgia
USE **tooth diseases**

aerodynamic axis
USE **aerodynamic balance**

aerodynamic balance
UF *aerodynamic axis*
aerodynamic center
drag balance
trim (balance)
GS aerodynamic characteristics
. **aerodynamic balance**
balance
. **aerodynamic balance**
RT aircraft stability
dynamic characteristics
horizontal flight
lift drag ratio
mass distribution
spacecraft motion
spacecraft stability
static aerodynamic characteristics
turning flight

aerodynamic brakes
GS brakes (for arresting motion)
. **aerodynamic brakes**
. . ballutes
. . drag chutes
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
drag devices
. **aerodynamic brakes**
. . ballutes
. . drag chutes
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
RT aircraft brakes
control surfaces
flaperons
flaps (control surfaces)
parachutes
parafoils
retractable equipment
spoilers

aerodynamic buzz
USE **flutter**

aerodynamic center
USE **aerodynamic balance**

aerodynamic characteristics
GS **aerodynamic characteristics**
. aerodynamic balance
. aerodynamic drag
. . supersonic drag
. aerodynamic stability
. interference drag
. lift
. . interference lift
. . jet lift
. . rotor lift
. . zero lift
. static aerodynamic characteristics
RT aerodynamic noise
angle of attack

aspect ratio
∞ characteristics
cross flow
dynamic characteristics
engine airframe integration
flight envelopes
induced drag
rotor body interactions
under surface blowing
unsteady aerodynamics
upper surface blowing
wind tunnel tests

aerodynamic chords
USE **airfoil profiles**
chords (geometry)

aerodynamic coefficients
DEF Any nondimensional coefficients relating to aerodynamic forces or moments, such as a coefficient of drag, a coefficient of lift, etc. Used for lift coefficients.
UF *lift coefficients*
GS coefficients
. **aerodynamic coefficients**
RT ∞ drag coefficients
flow coefficients
flow distortion
force distribution
lift
lift drag ratio
pitching moments
pressure distribution
rolling moments
yawing moments

aerodynamic configurations
SN (LIMITED TO AERODYNAMIC VEHICLE SHAPES—FOR LIFTING OR THRUSTING SURFACES USE AIRFOILS)
GS **aerodynamic configurations**
. body–wing and tail configurations
. body–wing configurations
. canard configurations
. drooped airfoils
. waveriders
. wing nacelle configurations
RT aircraft configurations
aircraft design
airfoils
blunt bodies
bodies of revolution
channel wings
cones
∞ configurations
control surfaces
∞ design
disks (shapes)
drag
engine airframe integration
fairings
finned bodies
half cones
∞ hemispheres
intake systems
launch vehicle configurations
lift
lifting bodies
missile configurations
monoplanes
nacelles
nose tips
oblique wings
propulsion system configurations
protuberances
pylon mounting
Reynolds equation
ring structures
rotor body interactions
satellite configurations
scale models
semispan models
slender bodies
slender cones
spacecraft configurations
spheres
strakes
streamlined bodies
three dimensional bodies
wedges
wind tunnel models
wing roots

aerodynamic drag
GS aerodynamic characteristics
. **aerodynamic drag**
. . supersonic drag
aerodynamic forces
. **aerodynamic drag**
. . supersonic drag
dynamic characteristics
. drag
. . friction drag
. . . **aerodynamic drag**
. . . . supersonic drag
friction
. flow resistance
. . friction drag
. . . **aerodynamic drag**
. . . . supersonic drag
. skin friction
. . friction drag
. . . **aerodynamic drag**
. . . . supersonic drag
RT ballistics
base pressure
∞ drag coefficients
drag measurement
drag reduction
ground effect (aerodynamics)
hypersonic forces
induced drag
lift
lift drag ratio
orbit decay
pressure drag
∞ resistance
satellite drag
turbulence
vortex flaps

aerodynamic forces
DEF The force exerted by a moving gaseous fluid upon a body completely immersed in it. Used for Glauert coefficient.
UF *Glauert coefficient*
GS **aerodynamic forces**
. aerodynamic drag
. . supersonic drag
. aerodynamic interference
. aerodynamic loads
. . blast loads
. . gust loads
. hypersonic forces
. lift
. . interference lift
. . jet lift
. . rotor lift
. . zero lift
. wing loading
RT ∞ force
leading edge thrust
thrust distribution
unsteady aerodynamics

aerodynamic heat transfer
GS transmission
. heat transmission
. . heat transfer
. . . **aerodynamic heat transfer**
. . . . hypersonic heat transfer
. . . . supersonic heat transfer
RT ablation
aerothermodynamics
turbulent heat transfer

aerodynamic heating
DEF The heating of a body produced by the passage of air or other gases over its surface.
GS **heating**
. kinetic heating
. . **aerodynamic heating**
. . . shock heating
RT ablation
aerodynamics
aerothermochemistry
aerothermodynamics
atmospheric entry
boundary layer plasmas
compressible fluids
convective heat transfer
hypersonic reentry
reentry
reentry effects
reentry shielding
skin friction
skin temperature (non–biological)
transient heating
uncontrolled reentry (spacecraft)

aerodynamic interference
GS aerodynamic forces
. **aerodynamic interference**
RT aerodynamics
air flow
aircraft configurations
aircraft structures
airfoil profiles
control surfaces
∞ interference
protuberances
. rotor stator interactions
turbulent flow
wing profiles

aerodynamic lift
USE **lift**

aerodynamic loads
GS aerodynamic forces
. **aerodynamic loads**
. . blast loads
. . gust loads
loads (forces)
. dynamic loads
. . **aerodynamic loads**
. . . blast loads
. . . gust loads
RT axial compression loads
axial loads
compression loads
critical loading
edge loading
force distribution
loading moments
pressure distribution
shock loads
static loads
structural design criteria
thrust loads
transient loads
vibratory loads

wing loading

aerodynamic moments
USE stability derivatives

aerodynamic noise
UF *boundary layer noise*
GS elastic waves
. sound waves
. . noise (sound)
. . . aerodynamic noise
. . . . blade slap noise
. . . . propeller noise
RT acoustic retrofitting
aerodynamic characteristics
aeroelasticity
aircraft noise
flutter
jet aircraft noise
noise measurement
noise reduction
panel flutter
shock waves
sonic booms
surface noise interactions

aerodynamic stability
UF *flying platform stability*
GS aerodynamic characteristics
. aerodynamic stability
dynamic characteristics
. dynamic stability
. . motion stability
. . . aerodynamic stability
stability
. dynamic stability
. . motion stability
. . . aerodynamic stability
RT aeroelasticity
aircraft stability
airfoil oscillations
attitude stability
ballast (mass)
boundary layer stability
buffeting
directional stability
dynamic tests
flight envelopes
flight stability tests
flow stability
flutter
ground resonance
helicopter performance
hovering
lateral stability
liquid sloshing
longitudinal stability
low speed stability
mass distribution
pilot induced oscillation
pressure distribution
reentry
Richardson number
spacecraft motion
spacecraft stability
stability augmentation
static aerodynamic characteristics
turbulence effects
unsteady aerodynamics
vortex avoidance
wind tunnel stability tests
wing oscillations
wing rock
yaw

aerodynamic stalling
RT aircraft performance
aircraft spin
airspeed
angle of attack
boundary layer separation
lift drag ratio
low speed stability
rotating stalls
∞ stalling
sweep angle
zero lift

aerodynamic vehicles
USE aircraft

aerodynamics
DEF The science that deals with the motion of air and other gaseous fluids, and the forces acting on bodies when the bodies move through such fluids, or when such fluids move against or around the bodies. Used for hydroaeromechanics.
UF *hydroaeromechanics*
GS fluid mechanics
. fluid dynamics
. . gas dynamics
. . . aerodynamics
. . . . aerothermodynamics
. . . . hypersonics
. . . . rotor aerodynamics
. . . . supersonics
. . . . unsteady aerodynamics
RT aeroacoustics
aerodynamic heating
aerodynamic interference
aeroelasticity
aeronautical engineering
∞ aeronautics
∞ aerospace sciences
∞ aircraft
airfoils
blunt bodies
bodies of revolution
boundary layer control
compressible flow
control surfaces
drag
∞ dynamics
∞ flight
flight characteristics
flight mechanics
∞ flow
flow theory
free wing aircraft
ground effect (aerodynamics)
hypersonic flight
hypersonic flow
incompressible flow
inviscid flow
laminar flow
lift
Mach number
Mach–Zehnder interferometers
reentry
∞ science
slender bodies
subsonic flow
supersonic flow
thermodynamics
transonic flow
turbulent flow
uniform flow
unsteady flow
viscous flow
wind measurement
wind tunnels

aeroelastic research wings
DEF Wings that are designed with less than normal stiffness to test devices that suppress flutter.
GS airfoils
. wings
. . aeroelastic research wings
RT aircraft design
flutter
flutter analysis
structural design
wing oscillations

aeroelasticity
DEF The study of the response of structurally elastic bodies to aerodynamic loads.
GS mechanical properties
. elastic properties
. . aeroelasticity
. . . aeroservoelasticity
. . . aerothermoelasticity
RT aerodynamic noise
aerodynamic stability
aerodynamics
aerothermodynamics
aircraft structures
airfoil oscillations
DAST program
flutter
influence coefficient
panel flutter
rigid wings
thermoelasticity
unsteady aerodynamics
wing loading

aeroembolism
DEF The formation or liberation of gases in the blood vessels of the body, as brought on by a too-rapid change from a high, or relatively high, atmospheric pressure to a lower one.
GS embolisms
. aeroembolism
RT altitude sickness
decompression sickness
fat embolisms
stress (physiology)

aerogels
(added June 1990)
RT foams
gels
porous materials
silica gel
xerogels

aerogyro helicopters
USE XH-51 helicopter

aerology
DEF The study of the free atmosphere throughout its vertical extent, as distinguished from studies confined to the layer of the atmosphere adjacent to the Earth's surface.
GS meteorology
. aerology
RT Atmospheric & Oceanographic Inform Sys
Global Atmospheric Research Program
meteorological parameters
polar meteorology
sea breeze
wind (meteorology)

aeromagnetism
RT aerial reconnaissance
geomagnetism
magnetic anomalies

magnetic surveys
magnetic variations
remote sensing

aeromagneto flutter
USE **flutter**

aeromaneuvering
DEF Changing orbit size or plane or both by entering the upper atmosphere to create drag or lift or both.
RT aeroassist
aerobraking
aerocapture
atmospheric entry
interplanetary transfer orbits
transfer orbits

Aeromaneuvering Orbit to Orbit Shuttle
DEF Proposed reusable upper stage for the Space Shuttle superseded by the orbit transfer vehicle. Used for AMOOS.
UF *AMOOS*
GS orbit transfer vehicles
. **Aeromaneuvering Orbit to Orbit Shuttle**
RT Orbit Maneuvering Engine (Space Shuttle)
orbital mechanics
reusable launch vehicles
space shuttles

aeronautical engineering
GS aerospace engineering
. **aeronautical engineering**
RT aerodynamics
∞ aeronautics
∞ aircraft
aircraft design
aircraft industry
auxiliary propulsion
compound helicopters
∞ engineering
functional design specifications
mechanical engineering
propulsion
structural engineering

aeronautical satellites
GS artificial satellites
. communication satellites
. . aeronautical satellites
. . . Aerosat satellites
RT ∞ aeronautics
air traffic control
aircraft approach spacing
aircraft communication
ground–air–ground communication
rescue operations
satellite networks

∞ aeronautics
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *aviation*
RT aeroacoustics
aerodynamics
aeronautical engineering
aeronautical satellites
aerospace engineering
∞ aerospace sciences
air law
∞ aircraft
airports
avionics
civil aviation
∞ flight
general aviation aircraft
human factors engineering
∞ military aviation
∞ science
TACT program

aeronomy
DEF The study of the upper regions of the atmosphere where ionization, dissociation, and chemical reactions take place.
RT airglow
Alpine meteorology
atmospheric composition
atmospheric physics
auroras
DIAL satellite
field aligned currents
flux transfer events
geophysics
magnetosphere–ionosphere coupling
mesometeorology
meteorology
polar cusps
upper atmosphere

aerophysics
USE **atmospheric physics**

aeroquatic vehicles
RT aircraft design
attack aircraft
∞ military vehicles
underwater propulsion
underwater vehicles

AEROS satellite
GS artificial satellites
. meteorological satellites
. . **AEROS satellite**
. synchronous satellites
. . **AEROS satellite**

Aerosat satellites
GS artificial satellites
. communication satellites
. . aeronautical satellites
. . . **Aerosat satellites**
. ESA satellites
. . **Aerosat satellites**
. navigation satellites
. . **Aerosat satellites**
. synchronous satellites
. . **Aerosat satellites**
ESA spacecraft
. ESA satellites
. . **Aerosat satellites**
RT European space programs
satellite networks

aeroservoelasticity
(added September 1993)
UF *ASE (aerodynamics)*
GS mechanical properties
. elastic properties
. . aeroelasticity
. . . **aeroservoelasticity**
RT active control
actuators
airfoil oscillations
dynamic control
dynamic response
dynamic structural analysis
flutter
servocontrol
unsteady aerodynamics

aerosinusitis
GS diseases
. respiratory diseases
. . **aerosinusitis**
RT aerospace medicine
altitude sickness

aerosols
DEF Dispersions of solid or liquid particles in gaseous media.
GS mixtures
. dispersions
. . colloids
. . . **aerosols**
. . . . fog
. . liquid–gas mixtures
. . . **aerosols**
. . . . fog
particles
. **aerosols**
. . fog
RT air pollution
Aitken nuclei
atmospheric effects
atomizing
condensation nuclei
crop dusting
dust
entrainment
environment pollution
environmental surveys
exhaust clouds
fog dispersal
fumes
gas atomization
mist
mixers
particulates
photophoresis
pollution transport
SAGE satellite
smoke
smoke abatement
spraying
thermophoresis

aerospace engineering
UF *space systems engineering*
GS aerospace engineering
. aeronautical engineering
RT ∞ aeronautics
∞ aerospace sciences
∞ aircraft
∞ engineering
mechanical engineering
missile design
structural engineering

aerospace environments
SN (EXCLUDES SPACECRAFT INTRAVEHICULAR ENVIRONMENTS)
UF *space environment*
GS environments
. aerospace environments
. . cislunar space
. . deep space
. . . interplanetary space
. . . interstellar space
. . Earth orbital environments
RT ∞ aerospace sciences
argon–oxygen atmospheres
∞ astronautics
bioastronautics
bioprocessing
biosatellites
cosmic rays
Earth atmosphere
electromagnetic radiation
exobiology
extraterrestrial environments

extraterrestrial life
extraterrestrial radiation
extravehicular activity
geophysical fluid flow cells
hazardous material disposal (in space)
helium–oxygen atmospheres
Jupiter atmosphere
life support systems
lunar environment
manned space flight
Mars atmosphere
Neptune atmosphere
panspermia
planetary environments
radiation belts
solar radiation
space exploration
space flight
space habitats
space manufacturing
spaceborne experiments
spacecraft cabin simulators
thermal environments
Uranus atmosphere
vacuum
Venus atmosphere

aerospace industry
GS industries
. aerospace industry
. . aircraft industry
RT ∞ aircraft
commercial spacecraft
space commercialization

aerospace medicine
DEF That branch of medicine dealing with the effects of flight through the atmosphere or in space upon the human body and with the prevention or cure of physiological or psychological malfunctions arising from these effects.
UF *space medicine*
GS medical science
. aerospace medicine
. . aviation psychology
. . space psychology
RT acceleration stresses (physiology)
aerosinusitis
∞ aerospace sciences
altitude sickness
bioastronautics
biofeedback
∞ biology
biomedical data
Chlorella
closed ecological systems
electrolyte metabolism
fasting
flight fatigue
gravitational physiology
head down tilt
head movement
∞ medicine
mobile quarantine facility
motion sickness
radiology
∞ science
space adaptation syndrome
spacecraft environments
sports medicine
telemedicine
weightlessness

aerospace planes
GS aerospace vehicles
. aerospace planes
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . X-30 vehicle
maneuverable spacecraft
. aerospace planes
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . X-30 vehicle
manned spacecraft
. aerospace planes
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . X-30 vehicle
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . aerospace planes
. . . . HOPE aerospace plane
. . . . HOTOL launch vehicle
. . . . X-30 vehicle
soft landing spacecraft
. aerospace planes
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . X-30 vehicle
RT ∞ aircraft
Astro vehicle
boostglide vehicles
Buran space shuttle
Delta Clipper
gliders
hypersonic aircraft
hypersonic gliders
launch vehicles
lifting reentry vehicles
liquid air cycle engines
military spacecraft
National Aerospace Plane Program
research aircraft
rocket planes
Saenger space transportation system
transatmospheric vehicles
X-20 aircraft

aerospace safety
DEF The engineering assessment and analysis of systems, subsystems, and functions of spacecraft, missiles, advanced aircraft and ground support in order to identify hazards associated with such systems and to design procedures that eliminate those hazards or determine tolerable safety levels.
GS safety
. aerospace safety
RT accident prevention
aircraft safety
flight safety
range safety
safety factors
safety management

∞ aerospace sciences
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *space sciences*
RT aerodynamics
∞ aeronautics
aerospace engineering
aerospace environments
aerospace medicine
aerospace systems
astronomy
Committee on Space Research
environmental engineering
extraterrestrial radiation
International Space Year
space laboratories

aerospace systems
RT ∞ aerospace sciences
control systems design
missile systems
∞ systems
systems engineering

aerospace technology transfer
DEF Technology transfer germane to aircraft and space vehicles, their propulsion, guidance, etc.
GS technology transfer
. aerospace technology transfer
RT Canadian space program
information flow
reports
technological forecasting
technology utilization

aerospace vehicles
DEF Vehicles capable of flight within and outside the sensible atmosphere.
GS aerospace vehicles
. aerospace planes
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . X-30 vehicle
. flexible spacecraft
RT ∞ aircraft
commercial spacecraft
∞ spacecraft
transatmospheric vehicles

aerospike engines
(added July 1997)
DEF Rocket engines incorporating a radial in-flow (aerospike) nozzle for altitude compensation. Since the nozzle is open to the ambient atmosphere, the plume compensates for decreasing atmospheric pressure as the vehicle ascends.
GS engines
. rocket engines
. . aerospike engines
RT nozzle design
plug nozzles
propulsion system configurations
rocket engine design
rocket exhaust
rocket nozzles
spike nozzles

aerostatics
GS statics
. aerostatics
RT buoyancy
∞ dynamics
∞ equilibrium
fluid mechanics
hydrostatics

aerostats
USE airships

aerothermochemistry
GS environmental chemistry
. aerothermochemistry
thermochemistry
. aerothermochemistry
RT ablation
aerodynamic heating
aerothermodynamics
atmospheric chemistry
chemical engineering
∞ chemistry
nozzle flow

physical chemistry
pyrometallurgy
reentry physics
reentry shielding
reentry vehicles

aerothermodynamics
DEF The study of aerodynamic phenomena at sufficiently high gas velocities that thermodynamic properties of the gas are important.
GS fluid mechanics
. fluid dynamics
. . gas dynamics
. . . aerodynamics
. . . . **aerothermodynamics**
thermodynamics
. **aerothermodynamics**
RT aerodynamic heat transfer
aerodynamic heating
aeroelasticity
aerothermochemistry
ASSET project
boundary layer plasmas
∞ chemistry
combustion physics
∞ dynamics
hypersonic heat transfer
hypersonic reentry
hypersonics
Rankine-Hugoniot relation
reentry
reentry physics
∞ science
skin temperature (non-biological)
supersonics
thermoelasticity

aerothermoelasticity
DEF The study of the response of elastic structures to the combined effects of aerodynamic heating and loading.
GS mechanical properties
. elastic properties
. . aeroelasticity
. . . **aerothermoelasticity**
. . thermoelasticity
. . . **aerothermoelasticity**

aerozine
DEF A rocket fuel consisting of a mixture of hydrazine and unsymmetrical dimethylhydrazine (UDMH).
GS fuels
. monopropellants
. . **aerozine**
propellants
. rocket propellants
. . liquid rocket propellants
. . . monopropellants
. . . . **aerozine**
RT dimethylhydrazines
hydrazines

AFC (control)
USE **automatic frequency control**

AFCS (control system)
USE **automatic flight control**

affects
USE **effects**

afferent nervous systems
GS anatomy
. nervous system
. . **afferent nervous systems**
RT sensorimotor performance
∞ systems

affinity
GS **affinity**
. **electron affinity**
. **negative electron affinity**
RT attraction
chemical compatibility
compatibility

Afghanistan
GS nations
. **Afghanistan**
RT Asia

AFM (microscopy)
USE **atomic force microscopy**

Africa
GS continents
. **Africa**
RT African rift system
Algeria
Angola
Arcomsat
Benin
Botswana
Burkina
Burundi
Cameroon
Cape Verde
Central African Republic
Chad
Congo (Brazzaville)
Cote d'Ivoire
Democratic Republic of Congo
Djibouti
Egypt
Ethiopia
Gabon
Gambia
Ghana
Guinea
Kalahari Basin (Africa)
Kenya
Lesotho
Liberia
Libya
Libyan desert
Madagascar
Malawi
Mali
Mauritania
Mauritius
Middle East
Morocco
Mozambique
Namibia
nations
Niger
Nigeria
Red Sea
Republic of South Africa
Rwanda
Sahara Desert (Africa)
Senegal
Seychelles
Sierra Leone
Somalia
Spanish Sahara
Sudan
Swaziland
Tanzania
Togo
Tunisia
Uganda
Zambia
Zimbabwe

African rift system
GS geological faults
. **African rift system**
RT Africa
∞ systems

afterbodies
DEF Companion bodies that trail satellites. Sections or pieces of rockets or spacecraft that enter the atmosphere unprotected behind nose cones or other bodies that are protected for entry. Afterparts of vehicles. Used for cylindrical afterbodies and stems.
UF *cylindrical afterbodies*
stems
RT aircraft structures
base heating
boattails
∞ bodies
centerbodies
conical bodies
cylindrical bodies
flared bodies
forebodies
skirts
swing tail assemblies
tail assemblies

afterburners
USE **afterburning**

afterburning
DEF Irregular burning of fuel left in the firing chamber of a rocket after cutoff. The function of an afterburner, a device for augmenting the thrust of a jet engine by burning additional fuel in the uncombined oxygen in the gases from the turbine. Used for afterburners.
UF *afterburners*
GS combustion
. **afterburning**
RT burners
exhaust systems
infrared suppression
internal combustion engines
J-57 engine
jet engines
thrust augmentation

afterglows
DEF Broad, high arches of radiance or glow seen occasionally in the western sky above the highest clouds in deepening twilight, caused by the scattering effect of very fine particles of dust suspended in the upper atmosphere. Also, the transient decay of a plasma after the power has been turned off.
GS **afterglows**
. helium afterglow
. oxygen afterglow
RT atmospheric ionization
gas discharges
gas ionization
light scattering
luminescence
phosphorescence
plasma decay

afterimages
GS images
. **afterimages**
RT critical flicker fusion
illusions
psychological effects
sensory perception
visual perception

AGB stars
USE asymptotic giant branch stars

AGC (control)
USE automatic gain control

age determination
USE chronology

age factor
RT aging (biology)
gerontology
life span

age hardening
USE precipitation hardening

Agena A rocket vehicle
GS rocket vehicles
. single stage rocket vehicles
.. Agena rocket vehicles
... Agena A rocket vehicle
RT Discoverer satellites
Thor Agena launch vehicle

Agena B Ranger Program
GS programs
. NASA programs
.. NASA space programs
... Ranger project
.... Agena B Ranger Program
. projects
.. Ranger project
... Agena B Ranger Program
. space programs
.. NASA space programs
... Ranger project
.... Agena B Ranger Program
RT Thor Agena launch vehicle

Agena B rocket vehicle
GS rocket vehicles
. single stage rocket vehicles
.. Agena rocket vehicles
... Agena B rocket vehicle
RT Discoverer satellites
Echo satellites
EGO
Gemini project
Mariner program
OAO
POGO
Ranger project

Agena C rocket vehicle
GS rocket vehicles
. single stage rocket vehicles
.. Agena rocket vehicles
... Agena C rocket vehicle

Agena D rocket vehicle
GS rocket vehicles
. single stage rocket vehicles
.. Agena rocket vehicles
... Agena D rocket vehicle

Agena rocket vehicles
GS rocket vehicles
. single stage rocket vehicles
.. Agena rocket vehicles
... Agena A rocket vehicle
... Agena B rocket vehicle
... Agena C rocket vehicle
... Agena D rocket vehicle
RT Atlas Agena B launch vehicle
Atlas Agena launch vehicles
Discoverer satellites
Echo satellites
Gemini project
Mariner program
Ranger project
Thor Agena launch vehicle

∞ agents
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT accelerating agents
additives
anticoagulants
antifouling
antioxidants
diluents
neutralizers
opacifiers
oxidizers
penetrants
preservatives
stabilizers (agents)
surfactants

agglomeration
RT accumulations
atomic clusters
cementation
clumps
coagulation
coalescing
compacting
concentrating
crystallization
densification
flocculating
galactic clusters
lumping
metal clusters
molecular clusters
plugging
precipitation (chemistry)
∞ separation
settling
sintering
Virgo galactic cluster

agglutination
GS bonding
. agglutination
RT adhesion
adhesive bonding
adhesives
cementation
chemical bonds
cohesion

aggregates
RT concrete structures
concretes
∞ construction materials
dolomite (mineral)
gravels
lava
limestone
rocks
sands
slags

∞ aging
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aging (biology)
aging (materials)
aging (metallurgy)
radioactive age determination

aging (biology)
RT age factor
∞ aging
∞ biology
geriatrics
gerontology
life sciences
life span
mortality
physiology

aging (materials)
GS aging (materials)
. aging (metallurgy)
RT ∞ aging
hardening (materials)
∞ materials
mechanical properties
microstructure
strain hardening

aging (metallurgy)
GS aging (materials)
. aging (metallurgy)
RT ∞ aging
hardening (materials)
heat treatment
microstructure
solid solutions
strain hardening
supercooling
time temperature parameter

agitation
GS agitation
. ultrasonic agitation
RT aeration
blowing
chemical reaction control
coalescing
colloiding
dispersing
disposal
homogenizing
mixers
mixing
∞ separation
settling
shaking
sizing screens
splashing
suspending (mixing)
swirling
turbulent mixing
vortices
water treatment

agreements
RT contracts
conventions
insurance (contracts)
subcontracts

agricultural aircraft
DEF Light aircraft specially equipped for agricultural applications such as crop dusting.
UF *Snow aerial applicator aircraft S-2B*
Snow S-2 aircraft
GS general aviation aircraft
. agricultural aircraft
RT agriculture
∞ aircraft
AN-2 aircraft
crop dusting
light aircraft
swath width

agriculture
GS agriculture
. aquiculture
. silviculture
RT agricultural aircraft
AgRISTARS project
agroclimatology
agrometeorology
agrophysical units
alfalfa
barley
∞ biology
botany
citrus trees
conservation
corn
crop dusting
crop growth
crop identification
crop inventories
crop vigor
∞ crops
farm crops
farmlands
fruits
grasslands
Great Plains Corridor (North America)
halophiles
hay
hydrocarbon fuel production
hydroponics
irrigation
Large Area Crop Inventory Experiment
leguminous plants
oats
orchards
plant diseases
plant stress
planting
plants (botany)
plowing
plows
rural areas
rural land use
soil science
sorghum
sugar beets
sugar cane
sunflowers
tomatoes
tractors
vegetation growth
vineyards

AgRISTARS project
DEF A multiagency program utilizing Landsat remote sensing data to predict crop yields, land use, and detect pollution. Used for Crop Inventories by Remote Sensing.
UF *Crop Inventories by Remote Sensing*
GS programs
. projects
. . **AgRISTARS project**
RT agriculture
agrophysical units
crop inventories
farm crops
fresh water
land use
Landsat satellites
meteorological satellites
NASA programs
remote sensors
vegetative index

agroclimatology
GS climatology
. **agroclimatology**
RT agriculture
agrometeorology
hydroclimatology
meteorological parameters
meteorology
microclimatology

agrometeorology
GS meteorology
. **agrometeorology**
RT agriculture
agroclimatology
hydrometeorology
micrometeorology
thermal resources
tropical meteorology

agrophysical units
DEF Geographic areas defined for statistical purposes by AgRISTARS personnel whose boundaries are based on natural rather than political lines for the purpose of comparing similar agricultural regions.
RT agriculture
AgRISTARS project
farmlands
Large Area Crop Inventory Experiment

AGT
USE **automated guideway transit vehicles**

AH-1G helicopter
DEF US Army designation for the Bell Model 209 Hueycobra attack helicopter powered by a single Avco Lycoming T53-L-13 turboshaft engine.
GS attack aircraft
. **AH-1G helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **AH-1G helicopter**
RT ∞ military aircraft

AH-1S helicopter
(added April 1997)
GS attack aircraft
. **AH-1S helicopter**
Bell aircraft
. **AH-1S helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **AH-1S helicopter**
RT ∞ aircraft
∞ military aircraft

AH-1W helicopter
(added April 1997)
UF *SuperCobra*
GS attack aircraft
. **AH-1W helicopter**
Bell aircraft
. **AH-1W helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **AH-1W helicopter**
RT ∞ aircraft
∞ military aircraft

AH-63 helicopter
GS attack aircraft
. **AH-63 helicopter**
Bell aircraft
. **AH-63 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **AH-63 helicopter**
RT ∞ military aircraft

AH-64 helicopter
GS attack aircraft
. **AH-64 helicopter**
Hughes aircraft
. **AH-64 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **AH-64 helicopter**
RT ∞ military aircraft

∞ **aids**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT landing aids
navigation aids
visual aids

AIDS (disease)
USE **acquired immunodeficiency syndrome**

ailerons
GS airfoils
. **ailerons**
. . flaperons
. . spoiler slot ailerons
control surfaces
. **ailerons**
. . flaperons
. . spoiler slot ailerons
RT elevators (control surfaces)
elevons
lateral control
tabs (control surfaces)

AIMP-1
USE **Explorer 33 satellite**

AIMP-2
USE **Explorer 35 satellite**

AIMP-D
USE **Explorer 33 satellite**

AIMP-E
USE **Explorer 35 satellite**

air
DEF The mixture of gases comprising the Earth's atmosphere.
GS gases
. gas mixtures
. . **air**
. . . alveolar air
. . . compressed air
. . . expired air
. . . high temperature air
. . . liquid air
mixtures
. solutions
. . gas mixtures
. . . **air**
. . . . alveolar air
. . . . compressed air
. . . . expired air
. . . . high temperature air

. . . . liquid air
RT air data systems
∞ atmospheres
atmospheric composition
Earth atmosphere
environments
middle atmosphere

air bag restraint devices
GS bags
. **air bag restraint devices**
expandable structures
. inflatable structures
. . **air bag restraint devices**
safety devices
. **air bag restraint devices**
RT accident prevention
accidents
automobiles
collisions
crashes
∞ devices
highways
pneumatic equipment
safety

air bearings
USE **gas bearings**

air blasts
USE **aerial explosions**

air breathing boosters
DEF Boosters which are possible substitutes for rocket engines and which have inlets for oxygen sources for their engines rather than carrying their own oxygen as in a conventional rocket.
RT air breathing engines
booster rocket engines
∞ boosters

air breathing engines
GS engines
. **air breathing engines**
. . gas turbine engines
. . . hydrogen engines
. . . jet engines
. . . . ramjet engines
. . . . . integral rocket ramjets
. . . . . low volume ramjet engines
. . . . . pulsejet engines
. . . . . supersonic combustion ramjet engines
. . . . . turboramjet engines
. . . . turbojet engines
. . . . . Bristol–Siddeley Olympus 593 engine
. . . . . Bristol–Siddeley Viper engine
. . . . . ducted fan engines
. . . . . J–33 engine
. . . . . J–34 engine
. . . . . J–47 engine
. . . . . J–52 engine
. . . . . J–57 engine
. . . . . J–58 engine
. . . . . J–65 engine
. . . . . J–69–T–25 engine
. . . . . J–71 engine
. . . . . J–73 engine
. . . . . J–75 engine
. . . . . J–79 engine
. . . . . J–85 engine
. . . . . J–93 engine
. . . . . RA–28 engine
. . . . . turbofan engines
. . . . . Bristol–Siddeley BS 53 engine
. . . . . CF–700 engine
. . . . . convertible fan–shaft engines
. . . . . J–97 engine
. . . . . TF–30 engine
. . . . . TF–34 engine
. . . . . TF–41 engine
. . . . . turboprop engines
. . . . . T–34 engine
. . . . . T–38 engine
. . . . . T–53 engine
. . . . . T–55 engine
. . . . . T–56 engine
. . . . . T–63 engine
. . . . . T–64 engine
. . . . . T–74 engine
. . . . . T–76 engine
. . . . . T–78 engine
. . . . . turboramjet engines
. . . T–58 engine
RT air breathing boosters

air cargo
UF *air freight*
GS cargo
. **air cargo**
. . air mail
RT airdrops
airfield surface movements
airline operations
baggage
cargo aircraft
ground handling
heavy lift helicopters

air conditioning
DEF The simultaneous control of all, or at least three, of those factors affecting both the physical and chemical conditions of the atmosphere within any structure. These factors include temperature, humidity, motion, distribution, dust, bacteria, odor, and toxic gases.
RT blowers
comfort
condensers (liquefiers)
controlled atmospheres
coolants
coolers
cooling
cooling systems
∞ diffusers
exhaust systems
freon
heat pumps
heating
heating equipment
humidity
infiltration
life support systems
Modular Integrated Utility System
refrigerants
refrigerating
refrigerating machinery
space heating (buildings)
temperature
temperature control
temperature distribution
thermal insulation
∞ treatment
ventilation

air conditioning equipment
RT absorbents
absorbers (equipment)
adsorbents
blowers
compressors
condensers (liquefiers)
coolers
cooling systems
∞ diffusers
∞ equipment
evaporators
∞ fans
heat pumps
heating equipment
oxygen supply equipment
refrigerating machinery

air conductivity
RT atmospheric conductivity
electrical resistivity
thermal conductivity

air cooling
SN (COOLING WITH AIR)
GS cooling
. **air cooling**
RT coolants
coolers
cooling systems
liquid cooling
refrigerating
ventilation

air currents
GS fluid flow
. gas flow
. . air flow
. . . **air currents**
. . . . jet streams (meteorology)
. . . . meridional flow
. . . . vertical air currents
RT atmospheric circulation
barotropic flow
boundary layer flow
boundary layer transition
Brunt–Vaisala frequency
convection clouds
convection currents
∞ currents
ground wind
lee waves
sea breeze
upstream
wind (meteorology)
windpower utilization
zonal flow (meteorology)

air cushion landing systems
DEF Landing systems based on the ground effect principle whereby a stratum of air is utilized as the aircraft ground contacting medium (in place of landing gear).
RT aircraft landing
cushions
ground effect (aerodynamics)
skid landings
∞ systems

air cushion vehicles
USE **ground effect machines**

air data systems
SN (LIMITED TO FLIGHT DATA SYSTEMS)
DEF Sets of aerodynamic and thermodynamic sensors, and a computer which provide flight characteristics such as airspeed, static pressure, air temperature and Mach number.
GS data systems
. **air data systems**
RT air
∞ aircraft
∞ spacecraft
tables (data)
wind tunnel tests

air defense
GS **air defense**
. antimissile defense
. SAGE air defense system
RT antiradiation missiles
Ballistic Missile Early Warning System
camouflage
civil defense
deception
∞ defense
defense program
DMSP satellites
early warning systems
electronic warfare
jammers
optical countermeasures
sabotage
space surveillance (ground based)
space surveillance (spaceborne)
weapons delivery

Air Density Explorer A
USE **Explorer 19 satellite**

Air Density/Injun Explorer B
USE **Explorer 25 satellite**

air drop operations
RT bailout
ballutes
cargo
delivery
free fall
∞ operations
parachutes
parawings

air ducts
GS ducts
. **air ducts**
RT annular ducts
blowers
exhaust nozzles
∞ fans
gas flow
ventilators

air filters
GS cleaners
. **air filters**
separators
. fluid filters
. . **air filters**
RT cooling systems
dust collectors
∞ filters
precipitators
ventilation

air flow
GS fluid flow
. gas flow
. . **air flow**
. . . air currents
. . . . jet streams (meteorology)
. . . . meridional flow
. . . . vertical air currents
RT aerodynamic interference
atmospheric boundary layer
barotropic flow
Brunt–Vaisala frequency
compressible flow
∞ currents
duct geometry
ducted flow
streamlining
streams
ventilation

air freight
USE **air cargo**

air inlets
USE **air intakes**

air intakes
UF *air inlets*
GS intake systems
. **air intakes**
. . engine inlets
. . hypersonic inlets
. . inlet airframe configurations
. . supersonic inlets
RT bypass ratio
conical inlets
cowlings
inlet nozzles
inlet temperature
internal compression inlets
manifolds
nacelles
nose inlets
plenum chambers
scoops
side inlets
superchargers
supersonic diffusers
ventilation
ventilators
∞ water intakes

air jets
GS fluid flow
. jet flow
. . **air jets**
fluid jets
. **air jets**
RT gas flow
gas jets
jet streams (meteorology)
∞ jets
vapor jets

air land interactions
RT atmospheric boundary layer
atmospheric circulation
Earth cryosphere
gas–solid interactions
∞ interactions
land surface temperature
meteorology

air launching
GS launching
. **air launching**
RT multistage rocket vehicles
Pegasus air-launched booster
piggyback systems
X-34 reusable launch vehicle

air law
DEF The body of domestic and/or international laws dealing with regulations and liabilities in civil or military aviation.
GS law (jurisprudence)
. international law
. . **air law**
RT ∞ aeronautics
airspace
civil aviation
conventions
insurance (contracts)
legal liability
liabilities
∞ military aviation
National Airspace Utilization System
penalties
politics
public law
regulations
space law

air locks
DEF A stoppage or diminution of flow in a fuel system, hydraulic system, or the like, caused by pockets of air or vapor. Also chambers capable of being hermetically sealed that provide for passage between two places of different pressure as between an altitude chamber and the outside atmosphere.
GS compartments
. **air locks**
RT airlock modules
doors
egress
enclosures
hatches
ingress (spacecraft passageway)
∞ locks
pressure chambers
seals (stoppers)

air mail
GS cargo
. air cargo
. . **air mail**

air masses
DEF Large widespread volumes of air having particular characteristics of temperature and moisture content that were acquired at its source region and are modified as they move away from their source.
RT anticyclones
atmospheric circulation
Brunt–Vaisala frequency
cold fronts
fronts (meteorology)
meteorology
synoptic meteorology
warm fronts
weather forecasting
windpower utilization

air navigation
GS navigation
. **air navigation**
. . all-weather air navigation
. . area navigation
. . nap-of-the-earth navigation
. . . terrain following
RT astronavigation
boresight error
celestial navigation
celestial reference systems
collision avoidance
∞ control
dead reckoning
digital navigation
Doppler navigation
flight instruments
flight management systems
flight paths
flight plans
flight rules
guidance (motion)
hyperbolic navigation
inertial navigation
instrument flight rules
loran
loran C
loran D
National Airspace Utilization System
navigation aids

Omega Navigation System
polar navigation
radar navigation
radio navigation
Shoran
solar compasses
space navigation
Tacan
VHF omnirange navigation
visual flight

air piracy
UF *hijacking*
RT aircraft safety
airport security
crime
flight hazards
flight safety
operational hazards

air pollution
DEF The presence of unwanted material in the air. The term "unwanted material" here refers to material in sufficient concentrations, present for a sufficient time, and under circumstances to interfere significantly with comfort, health, or welfare of persons, or with the full use and enjoyment of property. Used for atmospheric impurities.
UF *atmospheric impurities*
GS pollution
. environment pollution
. . **air pollution**
. . . global air pollution
. . . indoor air pollution
RT acid rain
aerobiology
aerosols
ashes
atmospheric chemistry
atmospheric composition
atmospheric density
atmospheric effects
chlorofluorocarbons
chlorofluoromethane
clean energy
climate change
combustion products
contamination
diffusion
drops (liquids)
dust
Earth atmosphere
Earth environment
effluents
environment effects
environment protection
environmental chemistry
environmental quality
environmental surveys
environments
exhaust gases
exhaust systems
fallout
flue gases
fly ash
forest fires
Global Air Sampling Program
haze
human wastes
metabolic wastes
middle atmosphere
mixing height
mutagens
nitrous acid
odors
organic peroxides
oxidizers
ozone depletion
particles
particulates
photochemical oxidants
pollen
pollution monitoring
pollution transport
polynuclear organic compounds
smog
smoke
smoke abatement
soot
temperature inversions
waste disposal
wastes
wind (meteorology)

air purification
GS purification
. **air purification**
RT carbon dioxide concentration
carbon dioxide removal
decontamination
electrostatic precipitators
Hopcalite (trademark)
rebreathing
sterilization
ventilation

air quality
GS quality
. environmental quality
. . **air quality**
RT Earth atmosphere
environments
indoor air pollution
particulates
pollution control
pollution monitoring

air sampling
GS sampling
. **air sampling**
RT electrostatic precipitators
environment pollution
gas analysis
Global Air Sampling Program
indoor air pollution
particulates
smog

air sea ice interactions
GS gas–liquid interactions
. air water interactions
. . **air sea ice interactions**
RT ∞ interactions
sea ice

air sea interactions
USE **air water interactions**

air showers
USE **cosmic ray showers**

air sickness
USE **motion sickness**

air slew missiles
DEF Solid propellant rockets utilizing thrust vector control.
GS missiles
. **air slew missiles**
RT maneuverability
∞ rockets
solid propellant rocket engines
thrust vector control

air start
UF *engine relight (in–flight)*
in–flight starting
GS starting
. **air start**
RT aircraft control
aircraft engines
engine control
flight tests

air to air missiles
UF *air to air rockets*
GS missiles
. **air to air missiles**
. . Falcon missile
. . Matra missile
. . Sidewinder missiles
. . Sparrow missiles
. . . Sparrow 2 missile
. . . Sparrow 3 missile
RT antiaircraft missiles
ramjet missiles
SIAM missiles
space weapons
surface to air missiles

air to air refueling
GS refueling
. **air to air refueling**
RT tanker aircraft

air to air rockets
USE **air to air missiles**

air to surface missiles
GS missiles
. **air to surface missiles**
. . Bullpup missiles
. . Condor missile
. . Harpoon missile
. . Hound Dog missile
. . Maverick missiles
. . quail missile
. . Shrike missile
RT miss distance
ordnance
surface to air missiles
surface to surface missiles
∞ surfaces
weapon systems

air traffic
GS traffic
. **air traffic**
RT aircraft hazards
airline operations
airspace
collision avoidance
flight hazards
flight paths
flight plans
National Airspace Utilization System
National Aviation System

air traffic control
DEF A service operated by appropriate authority to promote the safe, orderly and expedious flow of air traffic.
GS ground based control
. **air traffic control**
. . automated en route ATC
. . radar approach control
traffic control
. **air traffic control**
. . automated en route ATC
. . radar approach control
RT aeronautical satellites
airborne radar approach

aircraft approach spacing
aircraft communication
aircraft guidance
aircraft safety
airport surface detection equipment
airport towers
airports
airspace
approach
approach control
approach indicators
attitude control
automated pilot advisory system
automated radar terminal system
Beacon Collision Avoidance System
collision avoidance
collisions
∞ control
discrete address beacon system
flight altitude
flight control
flight management systems
flight paths
flight plans
flight rules
flight safety
flight time
ground support equipment
ground–air–ground communication
heliports
instrument flight rules
instrument landing systems
landing
landing aids
landing instruments
landing radar
LOCATES system
microwave landing systems
midair collisions
military air facilities
National Airspace System
National Airspace Utilization System
National Aviation System
navigation aids
∞ operations
radar navigation
radio navigation
routes
solar compasses
surveillance radar
takeoff
taxiing
towers
tracking (position)
transponders
vortex advisory system
vortex avoidance

air traffic controllers (personnel)
GS personnel
. **air traffic controllers (personnel)**
RT airport towers
ground based control
landing aids
traffic control

air transportation
GS transportation
. **air transportation**
RT airline operations
commercial aircraft
commuter aircraft
compound helicopters
general aviation aircraft
marine transportation
National Aviation System
passenger aircraft
rapid transit systems
short haul aircraft
transport aircraft

air water interactions
UF *air sea interactions*
GS gas–liquid interactions
. **air water interactions**
. . air sea ice interactions
RT Atmospheric & Oceanographic Inform Sys
Earth cryosphere
el Nino
gyres
hydrological cycle
∞ interactions
liquid–gas mixtures
liquid–vapor interfaces
ocean dynamics
ocean models
sea surface temperature
water tunnel tests

airborne equipment
GS onboard equipment
. **airborne equipment**
. . airborne/spaceborne computers
. . Light Airborne Multipurpose System
. . TERCOM
RT Advanced Range Instrumentation Aircraft
airborne radar
aircraft communication
aircraft equipment
Astropiane
automatic landing control
avionics
balloon–borne instruments
cockpit weather information systems
∞ electric equipment
∞ equipment
flight instruments
hydraulic equipment
Kuiper Airborne Observatory
map matching guidance
MATTS (systems)
radar equipment
radio equipment
SOFIA (airborne observatory)
vacuum arc switches

airborne infection
GS diseases
. infectious diseases
. . **airborne infection**
RT aerobiology
parasitic diseases

Airborne Integrated Reconnaissance System
DEF Aerial reconnaissance system incorporating various modes of detection. Used for AIRS (reconnaissance sys).
UF *AIRS (reconnaissance sys)*
GS reconnaissance
. aerial reconnaissance
. . **Airborne Integrated Reconnaissance System**
RT ground truth
photoreconnaissance
∞ systems
targets

airborne lasers
GS onboard equipment
. **airborne lasers**
stimulated emission devices
. lasers
. . **airborne lasers**
RT laser applications
laser ranger/tracker
remote sensors
spaceborne lasers

airborne radar
(added August 1992)
GS radar
. **airborne radar**
. . airborne surveillance radar
RT airborne equipment
clutter
digital radar systems
Doppler radar
radar echoes
radar equipment
radar imagery
radar maps
radar receivers
radar targets
remote sensing
remote sensors
side–looking radar
space based radar
synthetic aperture radar

airborne radar approach
DEF The use of airborne radar for helicopter approach control — the radar cursor technique.
GS approach
. **airborne radar approach**
RT air traffic control
aircraft approach spacing
helicopter control
helicopters
landing aids
radar approach control

airborne range and orbit determination
UF *AROD (range–orbit determination)*
GS rangefinding
. **airborne range and orbit determination**
RT ∞ measurement
orbits

airborne surveillance radar
GS radar
. airborne radar
. . **airborne surveillance radar**
. surveillance radar
. . **airborne surveillance radar**
RT aircraft instruments
display devices
onboard equipment

Airborne Warning and Control System
USE **AWACS aircraft**

airborne/spaceborne computers
UF *flight computers*
onboard computers
spacecraft computers
GS data processing equipment
. computers
. . embedded computer systems
. . . **airborne/spaceborne computers**
onboard equipment
. airborne equipment
. . **airborne/spaceborne computers**
RT data processing
flight management systems
highly maneuverable aircraft
minicomputers
onboard data processing
spacecraft components
spacecraft electronic equipment

systems integration

Airbus
USE European Airbus

∞ aircraft
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *aerodynamic vehicles*
RT A-1 aircraft
A-2 aircraft
A-3 aircraft
A-4 aircraft
A-5 aircraft
A-6 aircraft
A-7 aircraft
A-9 aircraft
A-10 aircraft
A-37 aircraft
A-300 aircraft
A-330 aircraft
A-340 aircraft
Advanced Range Instrumentation Aircraft
aerodynamics
aeronautical engineering
∞ aeronautics
aerospace engineering
aerospace industry
aerospace planes
aerospace vehicles
agricultural aircraft
AH-1S helicopter
AH-1W helicopter
air data systems
aircraft accident investigation
aircraft accidents
aircraft antennas
aircraft approach spacing
aircraft brakes
aircraft carriers
aircraft communication
aircraft compartments
aircraft configurations
aircraft construction materials
aircraft control
aircraft design
aircraft detection
aircraft engines
aircraft equipment
aircraft fuel systems
aircraft fuels
aircraft guidance
aircraft hazards
aircraft hydraulic systems
aircraft industry
aircraft instruments
aircraft landing
aircraft lights
aircraft maintenance
aircraft maneuvers
aircraft noise
aircraft parts
aircraft performance
aircraft pilots
aircraft production
aircraft production costs
aircraft reliability
aircraft runup
aircraft safety
aircraft specifications
aircraft spin
aircraft stability
aircraft structures
aircraft survivability
aircraft tires
aircraft wakes
airships
Aladin 2 aircraft
Alouette helicopters
Alpha jet aircraft
amphibious aircraft
AN-2 aircraft
AN-22 aircraft
AN-24 aircraft
antisubmarine warfare aircraft
Antonov aircraft
Argosy MK-1 aircraft
ASSET gliders
ATLIT project
ATR-72 aircraft
attack aircraft
AVRO 707 aircraft
AWACS aircraft
B-1 aircraft
B-2 aircraft
B-26 aircraft
B-47 aircraft
B-50 aircraft
B-52 aircraft
B-57 aircraft
B-58 aircraft
B-66 aircraft
B-70 aircraft
BAC 111 aircraft
BAC aircraft
balloons
Beagle aircraft
Beech 99 aircraft
Beechcraft 18 aircraft
Beechcraft aircraft
Bell 214A helicopter
Bell aircraft
biplanes
bird-aircraft collisions
Boeing 707 aircraft
Boeing 720 aircraft
Boeing 727 aircraft
Boeing 733 aircraft
Boeing 737 aircraft
Boeing 747 aircraft
Boeing 757 aircraft
Boeing 767 aircraft
Boeing 777 aircraft
Boeing 2707 aircraft
Boeing aircraft
Bolkow aircraft
bomber aircraft
boostglide vehicles
Breguet 940 aircraft
Breguet 941 aircraft
Breguet 1150 aircraft
Breguet aircraft
Buccaneer aircraft
C-1A aircraft
C-2 aircraft
C-5 aircraft
C-8A augmentor wing aircraft
C-9 aircraft
C-15 aircraft
C-17 aircraft
C-33 aircraft
C-35 aircraft
C-46 aircraft
C-47 aircraft
C-54 aircraft
C-118 aircraft
C-119 aircraft
C-121 aircraft
C-123 aircraft
C-124 aircraft
C-130 aircraft
C-131 aircraft
C-133 aircraft
C-135 aircraft
C-140 aircraft
C-141 aircraft
C-160 aircraft
Canadair aircraft
Canberra aircraft
cargo aircraft
ceiling (aircraft capability)
Cessna 172 aircraft
Cessna 205 aircraft
Cessna 402B aircraft
Cessna aircraft
Cessna L-19 aircraft
Chance-Vought aircraft
Chinese aircraft
CL-41 aircraft
CL-44 aircraft
CL-84 aircraft
CL-600 challenger aircraft
CL-823 aircraft
COIN aircraft
Comet 4 aircraft
commercial aircraft
commuter aircraft
compound helicopters
Concorde aircraft
Curtiss-Wright aircraft
CV-340 aircraft
CV-440 aircraft
CV-880 aircraft
CV-990 aircraft
D-558 aircraft
Dassault aircraft
DC 3 aircraft
DC 7 aircraft
DC 8 aircraft
DC 9 aircraft
DC 10 aircraft
de Havilland aircraft
DH 112 aircraft
DH 115 aircraft
DH 121 aircraft
DH 125 aircraft
DHC 2 aircraft
DHC 4 aircraft
DHC 5 aircraft
DO-27 aircraft
DO-28 aircraft
DO-31 aircraft
DO-328 aircraft
Dornier aircraft
Douglas aircraft
drone aircraft
E-2 aircraft
E-3A aircraft
E-4A aircraft
Earth Resources Survey aircraft
EH-101 helicopter
Electra aircraft
electronic aircraft
European Airbus
F-2 aircraft
F-4 aircraft
F-5 aircraft
F-8 aircraft
F-9 aircraft
F-14 aircraft
F-15 aircraft
F-16 aircraft
F-17 aircraft
F-18 aircraft
F-22 aircraft
F-27 aircraft
F-28 transport aircraft

F-84 aircraft
F-86 aircraft
F-89 aircraft
F-94 aircraft
F-100 aircraft
F-101 aircraft
F-102 aircraft
F-104 aircraft
F-105 aircraft
F-106 aircraft
F-111 aircraft
F-117A aircraft
Fairchild-Hiller aircraft
Fairey aircraft
fan in wing aircraft
FD 2 aircraft
Fiat aircraft
fighter aircraft
Firebee 2 target drone aircraft
flight test vehicles
flying platforms
Fokker aircraft
Folding Fin aircraft rocket vehicle
free wing aircraft
FV-12A aircraft
G-1 aircraft
G-91 aircraft
G-95/4 aircraft
G-222 aircraft
GA-5 aircraft
general aviation aircraft
General Dynamics aircraft
GETOL aircraft
gliders
ground effect machines
Grumman aircraft
Gyrodyne aircraft
H-17 helicopter
H-19 helicopter
H-43 helicopter
H-53 helicopter
H-54 helicopter
H-56 helicopter
H-60 Helicopter
H-126 aircraft
Hamburger aircraft
Handley Page aircraft
hang gliders
Harrier aircraft
Hawker Siddeley aircraft
heavy lift helicopters
Heinkel aircraft
helicopters
Helio aircraft
HFB-320 aircraft
HH-65 helicopter
highly maneuverable aircraft
Hiller aircraft
hovercraft ground effect machines
HP-115 aircraft
HS-748 aircraft
HS-801 aircraft
Hughes aircraft
hypersonic aircraft
hypersonic gliders
IL-14 aircraft
IL-62 aircraft
IL-76 aircraft
IL-86 aircraft
IL-96 aircraft
Ilyushin aircraft
inflatable gliders
Jaguar aircraft
JAS-39 aircraft
jet aircraft
jet aircraft noise
jet provost aircraft
Jetstream aircraft
Jindivik target aircraft
Kaman aircraft
Kawasaki aircraft
L-1011 aircraft
L-2000 aircraft
Lear jet aircraft
lifting reentry vehicles
light aircraft
light helicopters
light intratheater transport
light transport aircraft
Ling-Temco-Vought aircraft
Lockheed aircraft
Lockheed model 18 aircraft
∞ low wing aircraft
man powered aircraft
Martin aircraft
Mcdonnell aircraft
McDonnell Douglas aircraft
MD 11 aircraft
MD 80 aircraft
Mercure aircraft
meteorological research aircraft
MH-262 aircraft
MiG aircraft
Mil aircraft
military air facilities
∞ military aircraft
military helicopters
monoplanes
MRCA aircraft
multiengine vehicles
Mystere 50 aircraft
Navion aircraft
night flights (aircraft)
Nihon aircraft
noise prediction (aircraft)
Nord 1500 aircraft
Nord aircraft
North American aircraft
Northrop aircraft
nuclear propelled aircraft
observation aircraft
onboard equipment
OV-1 aircraft
OV-10 aircraft
P-3 aircraft
P-51 aircraft
P-180 aircraft
P-186 aircraft
P-308 aircraft
P-1127 aircraft
P-1154 aircraft
PA-34 Seneca aircraft
passenger aircraft
PD-808 aircraft
Piaggio aircraft
Piasecki aircraft
pilotless aircraft
Piper aircraft
Potez aircraft
powered lift aircraft
propulsion
Questol aircraft
reconnaissance aircraft
remotely piloted vehicles
Republic aircraft
research aircraft
rigid rotor helicopters
rocket planes
rotary wing aircraft
rotor systems research aircraft
Ryan aircraft
S-2 aircraft
S-3 aircraft
S-61 helicopter
S-67 helicopter
SA-321 helicopter
SA-330 helicopter
Saab 37 aircraft
Saab 105 aircraft
Saab aircraft
SC-1 aircraft
SC-5 aircraft
SC-7 aircraft
Schleicher aircraft
Scimitar aircraft
SE-210 aircraft
short haul aircraft
short takeoff aircraft
Siebel aircraft
Sikorsky aircraft
Sikorsky Whirlwind helicopter
single engine aircraft
solar powered aircraft
spanloader aircraft
SR-71 aircraft
submersible aircraft
∞ subsonic aircraft
Sud Aviation aircraft
Sukhoi aircraft
supersonic aircraft
supersonic cruise aircraft research
T-2 aircraft
T-28 aircraft
T-33 aircraft
T-37 aircraft
T-38 aircraft
T-39 aircraft
TACT program
tailless aircraft
tandem rotor helicopters
tandem wing aircraft
tanker aircraft
target drone aircraft
test vehicles
tilt rotor aircraft
Tilt Rotor Research Aircraft Program
tilt wing aircraft
training aircraft
transatmospheric vehicles
transport aircraft
TS-11 aircraft
TSR-2 aircraft
TU-104 aircraft
TU-124 aircraft
TU-134 aircraft
TU-144 aircraft
TU-154 aircraft
TU-204 aircraft
Tupolev aircraft
turbofan aircraft
turboprop aircraft
U-2 aircraft
U-10 aircraft
ultralight aircraft
unidentified flying objects
utility aircraft
V-22 aircraft
V/STOL aircraft
Valiant aircraft
Vampire MK 35 aircraft
VATOL aircraft
VC-10 aircraft
vertical takeoff aircraft
Victor MK-1 aircraft
Viscount aircraft
VJ-101 aircraft
Vulcan aircraft
VZ-2 aircraft

VZ–8 aircraft
water takeoff and landing aircraft
weapons delivery
weather reconnaissance aircraft
Weser aircraft
Westland aircraft
Westland ground effect machines
Westland Whirlwind helicopter
wing nacelle configurations
∞ winged vehicles
X–1 aircraft
X–2 aircraft
X–3 aircraft
X–5 aircraft
X–13 aircraft
X–14 aircraft
X–15 aircraft
X–19 aircraft
X–20 aircraft
X–21 aircraft
X–21A aircraft
X–22 aircraft
X–22A aircraft
X–24 aircraft
X–29 aircraft
X–31 aircraft
X–36 aircraft
XC–142 aircraft
XV–3 aircraft
XV–4 aircraft
XV–5 aircraft
XV–8A aircraft
XV–9A aircraft
XV–11A aircraft
XV–15 aircraft
Yak 40 aircraft
Yakovlev aircraft
YC–14 aircraft
YF–12 aircraft

aircraft accident investigation
GS investigation
. accident investigation
. . **aircraft accident investigation**
RT ∞ aircraft
aviation meteorology
insurance (contracts)

aircraft accidents
GS accidents
. **aircraft accidents**
. . bird–aircraft collisions
RT ∞ aircraft
aircraft safety
aviation meteorology
collisions
crash landing
crashes
crashworthiness
ditching (landing)
flight hazards
flight safety
human factors engineering
insurance (contracts)
malfunctions
midair collisions
pilot error
weather

aircraft antennas
GS antennas
. **aircraft antennas**
RT ∞ aircraft
loop antennas
microwave antennas
missile antennas
protuberances
radar antennas
radio antennas

aircraft approach spacing
GS spacing
. **aircraft approach spacing**
RT aeronautical satellites
air traffic control
airborne radar approach
∞ aircraft
aircraft safety
airspace
approach
approach control
collision avoidance
flight safety
glide paths
ground based control
instrument approach
National Airspace Utilization System
National Aviation System
vortex advisory system
vortex avoidance

aircraft bases
USE **military air facilities**

aircraft brakes
GS brakes (for arresting motion)
. **aircraft brakes**
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
RT aerodynamic brakes
∞ aircraft
antiskid devices
ballutes
drag chutes
drag devices
thrust reversal
towed bodies
wheel brakes

aircraft cabins
USE **aircraft compartments**

aircraft carriers
GS surface vehicles
. **aircraft carriers**
water vehicles
. ships
. . **aircraft carriers**
RT ∞ aircraft
arresting gear
∞ carriers
military air facilities
∞ military aircraft
∞ military vehicles
navy
nuclear powered ships

aircraft communication
GS communicating
. **aircraft communication**
telecommunication
. **aircraft communication**
RT aeronautical satellites
air traffic control
airborne equipment
∞ aircraft
approach control
avionics
ground–air–ground communication
radar beacons
radio communication
wireless communication

aircraft compartments
UF *aircraft cabins*
aircraft interior
GS compartments
. **aircraft compartments**
RT ∞ aircraft
bays (structural units)
cabin atmospheres
∞ cabins
cockpits
gondolas
pressurized cabins
windshields

aircraft configurations
UF *fixed–wing aircraft*
GS **aircraft configurations**
. drooped airfoils
RT aerodynamic configurations
aerodynamic interference
∞ aircraft
compound helicopters
∞ configurations
control configured vehicles
flared bodies
∞ flight vehicles
joined wings
∞ low wing aircraft
missile configurations
propulsion system configurations
spacecraft configurations
under surface blowing
upper surface blowing
wing roots

aircraft construction
USE **aircraft structures**

aircraft construction materials
DEF A general term designating the materials used in manufacturing an aircraft.
GS **aircraft construction materials**
. airframe materials
RT ∞ aircraft
airframes
aluminum–lithium alloys
ceramic matrix composites
composite materials
∞ construction materials
functionally gradient materials
fuselages
lithium alloys
∞ materials
plastic aircraft structures
skin (structural member)
structural members
wings

aircraft control
UF *flap control*
GS **aircraft control**
. helicopter control
RT active control
air start
∞ aircraft
attitude control
automatic control
automatic flight control
∞ control
control equipment
control simulation
control stability
control sticks
controllability
DAST program
directional control

engine control
flight control
flight envelopes
flight instruments
fly by light control
fly by tube control
fly by wire control
ground based control
lateral control
longitudinal control
maneuverability
manual control
minor circle turning flight
pilot induced oscillation
radio control
remote control
stability augmentation
turbojet engine control
visual control

aircraft design
GS **aircraft design**
. helicopter design
RT acoustic retrofitting
aerodynamic configurations
aeroelastic research wings
aeronautical engineering
aeroquatic vehicles
∞ aircraft
airfoils
channel wings
compound helicopters
computer aided design
control configured vehicles
DAST program
∞ design
engine airframe integration
engine design
flight tests
free wing aircraft
induced drag
lofting
missile design
multidisciplinary design optimization
product development
rotor systems research aircraft
short haul aircraft
streamlining
structural design
systems engineering
Terminal Configured Vehicle Program
transatmospheric vehicles
vortex sheets
weight reduction
YF-12 aircraft

aircraft detection
GS detection
. **aircraft detection**
RT ∞ aircraft
∞ detectors
F-117A aircraft
IFF systems (identification)
infrared suppression
tracking (position)

Aircraft Energy Efficiency program
USE **ACEE program**

aircraft engines
UF *aircraft power sources*
GS engines
. **aircraft engines**
. . convertible fan-shaft engines
. . helicopter engines
. . J-52 engine
. . J-58 engine
. . J-97 engine
. . T-34 engine
. . T-38 engine
. . T-55 engine
. . T-63 engine
. . T-76 engine
. . T-78 engine
. . TF-30 engine
. . TF-34 engine
. . TF-41 engine
. . variable cycle engines
. . variable stream control engines
RT ACEE program
air start
∞ aircraft
engine airframe integration
gas turbine engines
hydrogen engines
infrared suppression
internal combustion engines
jet engines
jet propulsion
laser propulsion
nuclear propulsion
piston engines
∞ power supplies
quiet engine program
rocket engines
rotary engines
T-58 engine
topping cycle engines
turbine engines
Wankel engines

aircraft equipment
GS onboard equipment
. **aircraft equipment**
. . bombing equipment
. . ejection seats
. . . flying ejection seats
. . TERCOM
RT airborne equipment
∞ aircraft
aircraft hydraulic systems
aircraft lights
aircraft power supplies
aircraft tires
automatic landing control
automatic pilots
avionics
commonality
display devices
∞ equipment
flight instruments
landing aids
landing instruments
Light Airborne Multipurpose System
navigation aids
navigation instruments
radio direction finders

aircraft fuel systems
GS fuel systems
. **aircraft fuel systems**
RT ∞ aircraft
fuel pumps
fuel tank pressurization
fuel tanks
fuel valves
∞ systems

aircraft fuels
GS fuels
. chemical fuels
. . liquid fuels
. . . **aircraft fuels**
RT ∞ aircraft
antimisting fuels
automobile fuels
hydrocarbon fuels
jet engine fuels
liquid rocket propellants
monopropellants
slurry propellants
solid propellants
tanker aircraft

aircraft guidance
GS guidance (motion)
. **aircraft guidance**
RT air traffic control
∞ aircraft
approach control
automated en route ATC
collision avoidance
∞ indicators
instrument landing systems
radar approach control
radar navigation
radarscopes
radio navigation

aircraft hangars
USE **hangars**

aircraft hazards
GS hazards
. **aircraft hazards**
RT air traffic
∞ aircraft
aircraft icing
aviation meteorology
bird-aircraft collisions
birds
collisions
crash landing
crashes
flight hazards
flight safety
foreign bodies
human factors engineering
malfunctions
midair collisions
noise (sound)
operational hazards
refueling
threat evaluation
toxic hazards
weather

aircraft hydraulic systems
GS hydraulic equipment
. **aircraft hydraulic systems**
RT actuators
∞ aircraft
aircraft equipment
servocontrol
servomechanisms
∞ systems

aircraft icing
(added August 1991)
DEF Accumulation of ice on aircraft external surfaces, propellers and engine inlets from freezing rain or flight through inclement weather.
UF *wing icing*
GS ice formation
. **aircraft icing**
RT aircraft hazards
aircraft safety
aviation meteorology
deicers
deicing
flight conditions
flight hazards

flight safety
ice prevention

aircraft industry
GS industries
. aerospace industry
. . **aircraft industry**
RT aeronautical engineering
∞ aircraft
aircraft production costs

aircraft instruments
GS **aircraft instruments**
. approach indicators
. automatic pilots
. flight recorders
. . flight load recorders
. rate of climb indicators
RT airborne surveillance radar
∞ aircraft
altimeters
anemometers
attitude indicators
automatic flight control
avionics
compasses
display devices
flight control
flight instruments
flight paths
flight test instruments
I2S cameras
indicating instruments
instrument approach
instrument landing systems
∞ instruments
landing aids
landing instruments
laser altimeters
light emitting diodes
∞ measurement
measuring instruments
monitors
navigation aids
navigation instruments
position indicators
radar
radio altimeters
recording instruments
speed indicators
tachometers

aircraft interiors
USE **aircraft compartments**

aircraft landing
GS landing
. **aircraft landing**
. . crash landing
. . . ditching (landing)
. . skid landings
RT air cushion landing systems
∞ aircraft
all-weather landing systems
blind landing
ceilings (meteorology)
controllability
crashworthiness
enhanced vision
glide landings
hard landing
instrument landing systems
landing aids
landing mats
landing radar
low visibility
microwave landing systems
runway alignment
soft landing
spacecraft landing
takeoff
touchdown
vertical landing
vortex avoidance
water landing

aircraft launching devices
UF *takeoff systems*
GS launchers
. **aircraft launching devices**
. . JATO engines
RT catapults

aircraft lights
GS lighting equipment
. luminaires
. . **aircraft lights**
RT ∞ aircraft
aircraft equipment
beacons

aircraft maintenance
GS maintenance
. **aircraft maintenance**
RT ∞ aircraft
checkout
flight operations
ground support equipment
logistics

aircraft maneuvers
GS maneuvers
. **aircraft maneuvers**
RT ∞ aircraft
approach control
flight characteristics
flight envelopes
flight paths
highly maneuverable aircraft
maneuverability
obstacle avoidance
trajectory optimization
transition flight
turning flight
X-31 aircraft

aircraft models
GS models
. **aircraft models**
RT dynamic models
mathematical models
powered models
scale models
semispan models
spacecraft models
wind tunnel models

aircraft noise
GS elastic waves
. sound waves
. . noise (sound)
. . . **aircraft noise**
. . . . blade slap noise
. . . . jet aircraft noise
. . . . propeller noise
. . . . sonic booms
RT acoustic retrofitting
aeroacoustics
aerodynamic noise
∞ aircraft
coaxial nozzles
engine noise
footprints
jet aircraft
mufflers
noise intensity
noise measurement
noise prediction (aircraft)
noise reduction
synchrophasing

aircraft noise prediction
USE **noise prediction (aircraft)**

aircraft parts
RT ∞ aircraft
airfoils
airframes
channel wings
control surfaces
fuselages
landing gear
oblique wings
protuberances
swing tail assemblies
swing wings
tail assemblies
wings

aircraft performance
GS **aircraft performance**
. helicopter performance
RT aerodynamic stalling
∞ aircraft
aircraft spin
airspeed
controllability
distance
flight characteristics
flight envelopes
maneuverability
minimum drag
payloads
∞ performance
pilot performance
specifications
takeoff runs

aircraft pilots
UF *aviators*
copilots
jet pilots
GS personnel
. flying personnel
. . pilots (personnel)
. . . **aircraft pilots**
. . . . test pilots
. operators (personnel)
. . pilots (personnel)
. . . **aircraft pilots**
. . . . test pilots
RT ∞ aircraft
aviation psychology
flight crews
∞ pilots

aircraft power sources
USE **aircraft engines**

aircraft power supplies
DEF Electrical sources for the normal operation of aircraft.
GS electric power supplies
. **aircraft power supplies**
RT aircraft equipment
auxiliary power sources
electric generators
∞ power supplies

aircraft production
UF *fuselage mounting*
RT ∞ aircraft
costs

equipment specifications
product development
∞ production
production engineering

aircraft production costs
GS costs
. production costs
. . **aircraft production costs**
RT ∞ aircraft
aircraft industry
cost estimates
efficiency
∞ engineering
financial management
industries
manufacturing
production engineering
production management
productivity

aircraft reliability
UF *airworthiness*
airworthiness requirements
GS reliability
. **aircraft reliability**
RT ∞ aircraft
certification
circuit reliability
component reliability
helicopter performance
quality control
structural reliability
total quality management
vulnerability

aircraft runup
DEF Final engine check prior to takeoff.
GS preflight operations
. **aircraft runup**
RT ∞ aircraft
engine noise
engine tests
ground tests
jet aircraft noise

aircraft safety
GS safety
. **aircraft safety**
RT abort apparatus
aerospace safety
air piracy
air traffic control
∞ aircraft
aircraft accidents
aircraft approach spacing
aircraft icing
aircraft spin
all-weather landing systems
arresting gear
Beacon Collision Avoidance System
collision avoidance
collisions
crash landing
crashes
crashworthiness
ejection seats
flight hazards
flight safety
flying ejection seats
landing aids
landing radar
microwave landing systems
midair collisions
National Airspace System
navigation aids
safety devices
solar compasses
threat evaluation
weather
wheel brakes

aircraft specifications
GS specifications
. **aircraft specifications**
RT ∞ aircraft
airspeed
ceiling (aircraft capability)
controllability
distance
flight characteristics
payloads

aircraft spin
DEF A prolonged stall in fixed-wing aircraft characterized by a sustained spiral descent, usually with the nose down.
RT aerodynamic stalling
∞ aircraft
aircraft performance
aircraft safety
control stability
controllability
crash landing
flight hazards
flight safety
hazards
maneuvers
spin dynamics

aircraft stability
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . **aircraft stability**
. . . . hovering stability
stability
. dynamic stability
. . motion stability
. . . **aircraft stability**
. . . . hovering stability
RT aerodynamic balance
aerodynamic stability
∞ aircraft
attitude stability
buffeting
control stability
controllability
counterbalances
directional stability
flight envelopes
horizontal flight
lateral stability
liquid sloshing
longitudinal stability
low speed stability
pilot induced oscillation
static stability
structural stability
turning flight
upper surface blown flaps
wind tunnel stability tests
wing rock

aircraft structures
UF *aircraft construction*
GS **aircraft structures**
. airframes
. fuselages
. plastic aircraft structures
RT aerodynamic interference
aeroelasticity
afterbodies
∞ aircraft
airfoils
boron-epoxy composites
canard configurations
canopies
centerbodies
channel wings
control surfaces
fairings
forebodies
hulls (structures)
interference fit
leading edge flaps
noses (forebodies)
oblique wings
pylon mounting
shells (structural forms)
spacecraft structures
streamlining
∞ structures
swing tail assemblies
swing wings
tail assemblies
wings

aircraft survivability
RT ∞ aircraft
combat
∞ construction materials
durability
flight control
helicopters
life (durability)
∞ military aircraft
plastic aircraft structures
reinforced plastics
reliability
spacecraft survivability
survival
survival equipment
vulnerability

aircraft tires
GS tires
. **aircraft tires**
RT ∞ aircraft
aircraft equipment
landing gear
vehicle wheels

aircraft wakes
GS wakes
. **aircraft wakes**
. . helicopter wakes
. . slipstreams
. . . propeller slipstreams
RT ∞ aircraft
hypersonic wakes
laminar wakes
supersonic wakes
turbulent wakes
vortex advisory system
vortex alleviation

aircrews
USE **flight crews**

airdrops
RT air cargo
cargo
delivery
drag chutes
parachutes
parafoils

airfield surface movements
RT air cargo
airports
hangars

materials handling
mobile lounges
runways
∞ surfaces
taxiing

airfields
USE airports

airfoil characteristics
USE airfoils

airfoil fences
GS airfoils
. airfoil fences
RT boundary layer control
∞ fences
vortex generators
wings

airfoil oscillations
DEF Periodic motions experienced by airfoils in aerodynamic conditions.
GS oscillations
. airfoil oscillations
. . wing oscillations
. . . wing rock
RT aerodynamic stability
aeroelasticity
aeroservoelasticity
flapping
flutter
flutter analysis
rotary stability
structural vibration
undamped oscillations
vibration
vibration mode

airfoil profiles
UF *aerodynamic chords*
airfoil sections
airfoil thickness
Clark Y airfoil
GS airfoil profiles
. wing profiles
. . wing span
RT aerodynamic interference
airfoils
blade tips
∞ cross sections
Joukowski transformation
Kutta–Joukowski condition
Lighthill method
nose tips
∞ profiles
streamlining
supercritical airfoils
Theodorsen transformation
thickness
thickness ratio
thin airfoils
thin wings
tips
wedges
wing tips

airfoil sections
USE airfoil profiles

airfoil thickness
USE airfoil profiles

airfoils
DEF Structures, pieces, or bodies, originally likened to foils or leaves in being wide and thin, designed to obtain a useful reaction on themselves in their motion through the air. Used for airfoil characteristics.
UF *airfoil characteristics*
GS airfoils
. aerial rudders
. ailerons
. . flaperons
. . spoiler slot ailerons
. airfoil fences
. circulation control airfoils
. . circulation control rotors
. drooped airfoils
. elevators (control surfaces)
. elevons
. flaps (control surfaces)
. . externally blown flaps
. . . upper surface blown flaps
. . flaperons
. . jet flaps
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
. horizontal tail surfaces
. laminar flow airfoils
. propeller blades
. spoilers
. supercritical airfoils
. . supercritical wings
. supersonic airfoils
. tabs (control surfaces)
. thin airfoils
. . thin wings
. . . infinite span wings
. wings
. . aeroelastic research wings
. . cambered wings
. . caret wings
. . channel wings
. . cruciform wings
. . fixed wings
. . flexible wings
. . . parawings
. . GAW-1 airfoil
. . GAW-2 airfoil
. . joined wings
. . low aspect ratio wings
. . . delta wings
. . . trapezoidal wings
. . mission adaptive wings
. . oblique wings
. . rigid wings
. . rotary wings
. . . circulation control rotors
. . . lifting rotors
. . . . bearingless rotors
. . . rigid rotors
. . . tilting rotors
. . . tip driven rotors
. . . x wing rotors
. . slender wings
. . . infinite span wings
. . supercritical wings
. . swept wings
. . . swept forward wings
. . . . trapezoidal wings
. . . sweptback wings
. . . . arrow wings
. . . . delta wings
. . . . trapezoidal wings
. . swing wings
. . thin wings
. . . infinite span wings
. . twisted wings
. . uncambered wings
. . . ring wings
. . unswept wings
. . . infinite span wings
. . . rectangular wings
. . . ring wings
. . variable sweep wings
RT aerodynamic configurations
aerodynamics
aircraft design
aircraft parts
aircraft structures
airfoil profiles
aspect ratio
∞ blades
blade–vortex interaction
blunt leading edges
blunt trailing edges
body–wing configurations
camber
control surfaces
deicers
deicing
fins
∞ foils
foils (materials)
guide vanes
hydrofoils
interactional aerodynamics
jet vanes
leading edge thrust
leading edges
lift
lifting bodies
Lighthill method
monoplanes
rotor blades (turbomachinery)
rotors
rudders
sharp leading edges
stabilizers (fluid dynamics)
streamlined bodies
streamlining
tail assemblies
thickness ratio
trailing edges
turbomachine blades
vanes
waveriders
wedges

airframe materials
GS aircraft construction materials
. airframe materials
RT airframes
aluminum–lithium alloys
composite materials
∞ construction materials
functionally gradient materials
glass fiber reinforced plastics
∞ materials
structural design
structural members

airframes
DEF The assembled structural and aerodynamic components of an aircraft or rocket vehicle that support the different systems and subsystems integral to the vehicle.
GS aircraft structures
. airframes
frames
. airframes
RT aircraft construction materials
aircraft parts
airframe materials
bays (structural units)

canopies
control surfaces
engine airframe integration
fins
fuselages
landing gear
missile bodies
missile structures
nacelles
protuberances
tail assemblies
wing nacelle configurations
wings

Airgeep aircraft
USE **VZ–8 aircraft**

airglow
DEF The quasi–steady radiant emission from the upper atmosphere as distinguished from the sporadic emission of the auroras. Used for atmospheric emission.
UF *atmospheric emission*
GS atmospheric radiation
. sky radiation
. . **airglow**
. . . geocoronal emissions
. . . nightglow
. . . twilight glow
electromagnetic radiation
. light (visible radiation)
. . sky radiation
. . . **airglow**
. . . . geocoronal emissions
. . . . nightglow
. . . . twilight glow
RT aeronomy
atmospheric ionization
auroras
chemiluminescence
Earth atmosphere
emission
Fabry–Perot spectrometers
light emission
night sky
oxygen spectra
radiative recombination
Rayleigh scattering
sky brightness

airline operations
RT air cargo
air traffic
air transportation
civil aviation
commercial aircraft
operating costs
operational problems
∞ operations
passengers
short haul aircraft

airlock modules
GS modules
. **airlock modules**
RT air locks
Apollo applications program
multiple docking adapters
Saturn 1 workshop
Saturn 5 workshop
Saturn workshops
Skylab 1
Skylab 2
Skylab 3
Skylab 4
Skylab program
spacecraft docking modules

airport beacons
GS landing aids
. **airport beacons**
. . discrete address beacon system
navigation aids
. beacons
. . **airport beacons**
. . . discrete address beacon system
RT radio beacons
solar compasses

airport lights
GS landing aids
. **airport lights**
. . runway lights
lighting equipment
. luminaires
. . **airport lights**
. . . runway lights
RT searchlights

airport planning
GS planning
. **airport planning**
RT ground support equipment
heliports
land use
sites

airport security
DEF Organization of trained security personnel, surveillance and screening devices, and procedures used for the protection of airport and airline property, aircraft, passengers, employees, and visitors from injury, air piracy, and other unauthorized acts.
GS security
. **airport security**
RT air piracy
airports
explosives detection
ion mobility spectroscopy
protection
vulnerability

airport surface detection equipment
UF *ASDE*
RT air traffic control
∞ equipment
ground based control
radar equipment
search radar
∞ surfaces
surveillance radar

airport towers
GS towers
. **airport towers**
RT air traffic control
air traffic controllers (personnel)
airports
ground based control
heliports
landing aids
traffic control

airports
DEF An area of land or water that is used, or intended to be used, for the landing and takeoff of aircraft, including buildings and facilities, if any.
UF *airfields*
GS **airports**
. heliports
RT ∞ aeronautics
air traffic control
airfield surface movements
airport security
airport towers
∞ facilities
hangars
instrument landing systems
landing aids
landing mats
military air facilities
mobile lounges
mooring
National Airspace System
navigation aids
∞ ports
runways
site selection
∞ strip

AIRS (reconnaissance sys)
USE **Airborne Integrated Reconnaissance System**

airships
DEF Propelled and steerable dirigibles dependent on gases for flotation. Used for aerostats and dirigibles.
UF *aerostats*
dirigibles
GS **airships**
. heavy lift airships
RT ∞ aircraft
balloons
gondolas
inflatable structures
∞ military aircraft

airspace
DEF The atmosphere above a particular portion of the earth, usually defined by the boundaries of an area on the surface projected perpendicularly upward.
RT air law
air traffic
air traffic control
aircraft approach spacing
boundaries
collision avoidance
flight paths
National Airspace System
National Airspace Utilization System

airspeed
GS rates (per time)
. **airspeed**
velocity
. **airspeed**
RT aerodynamic stalling
aircraft performance
aircraft specifications
boundary layer separation
flight characteristics
ground speed
high speed
low speed
Mach number
wind velocity

airworthiness
USE **aircraft reliability**

airworthiness requirements
USE **aircraft reliability**

Airy function
GS analysis (mathematics)
. complex variables
. . **Airy function**
functions (mathematics)
. **Airy function**
RT cylindrical bodies

differential equations
elastic properties
harmonic functions
Poisson ratio
stress analysis

Aitken nuclei
DEF Microscopic particles in the atmosphere which serve as condensation nuclei for droplet growth during the rapid adiabatic expansion produced by an Aitken dust counter.
GS condensation nuclei
. Aitken nuclei
RT aerosols
atmospheric chemistry
atmospheric composition
cloud physics
coagulation
condensates
crystal growth
dust
ice nuclei
nucleation
∞ nuclei
supercooling

AJ-10 engine
GS engines
. rocket engines
. . booster rocket engines
. . . AJ-10 engine
. . liquid propellant rocket engines
. . . AJ-10 engine
RT tartar missile

AJ-1000 engine
USE M-1 engine

Akebono satellite
USE EXOS-D satellite

akermanite
DEF A mineral of the melilite group. It is isomorphous with gehlenite.
GS calcium compounds
. calcium carbonates
. . akermanite
. calcium oxides
. . akermanite
carbon compounds
. carbonates
. . calcium carbonates
. . . akermanite
chalcogenides
. oxides
. . metal oxides
. . . alkaline earth oxides
. . . . calcium oxides
. . . . . akermanite
. . . . magnesium oxides
. . . . . akermanite
magnesium compounds
. magnesium oxides
. . akermanite
minerals
. akermanite
RT silicates
silicon compounds
silicon oxides

Alabama
GS nations
. United States
. . Alabama
RT Gulf of Mexico
Tennessee Valley (AL-KY-TN)

Aladin 2 aircraft
GS transport aircraft
. Aladin 2 aircraft
V/STOL aircraft
. short takeoff aircraft
. . Aladin 2 aircraft
RT ∞ aircraft

Alais meteorite
GS celestial bodies
. meteorites
. . stony meteorites
. . . carbonaceous meteorites
. . . . carbonaceous chondrites
. . . . . Alais meteorite
. . . chondrites
. . . . carbonaceous chondrites
. . . . . Alais meteorite

alanine
GS acids
. amino acids
. . alanine
. . . phenylalanine
. carboxylic acids
. . alanine
. . . phenylalanine
organic compounds
. amino acids
. . alanine
. . . phenylalanine
. carboxylic acids
. . alanine
. . . phenylalanine
RT proteins

alarms
USE warning systems

Alaska
GS nations
. United States
. . Alaska
RT Aleutian Islands (US)
Beaufort Sea (North America)
Chena River Basin (AK)
Cook Inlet (AK)
Gulf of Alaska
Prince William Sound (AK)
Wrangell Mountains (AK)

Albania
GS nations
. Albania
RT Europe

albedo
DEF The ratio of the amount of electromagnetic radiation reflected by a body to the amount incident upon it. It is often expressed as a percentage, as, the albedo of the Earth is 34 percent.
GS albedo
. cosmic ray albedo
. Earth albedo
. lunar albedo
RT absorptance
cosmic rays
Earth radiation budget experiment
optical properties
planetary radiation
reflectance
solar radiation
surface properties

Alberta
GS nations
. Canada
. . Alberta

albinism
GS diseases
. albinism
RT pigments
skin (anatomy)

albumins
GS biopolymers
. proteins
. . albumins
organic compounds
. proteins
. . albumins
RT elastin

alcoholates
USE alkoxides

alcohols
GS hydroxyl compounds
. alcohols
. . ethyl alcohol
. . glycols
. . isopropyl alcohol
. . methyl alcohol
. . phenols
. . . biphenols
. . . cresols
. . . phloroglucinol
. . . thymol
. . polyvinyl alcohol
. . triols
. . . cyanuric acid
RT alkoxides
carbohydrates
gasohol (fuel)
glycerols
hydroxyl radicals
methoxy systems
organic compounds
thiols

aldehydes
DEF Carbonyl groups to which a hydrogen atom is attached; the first stage of an alcohol; -CHO.
GS aldehydes
. acetaldehyde
. acroleins
. chloral
. formaldehyde
RT acetyl compounds
furfuryl alcohol
organic compounds
retinene

aldolase
GS biopolymers
. proteins
. . enzymes
. . . aldolase
organic compounds
. proteins
. . enzymes
. . . aldolase
RT muscles

aldosterone
GS organic compounds
. lipids
. . steroids
. . . corticosteroids
. . . . aldosterone
secretions
. endocrine secretions
. . hormones

. . . corticosteroids
. . . . aldosterone
RT adrenal metabolism
electrolyte metabolism

alertness
RT arousal
attention
wakefulness

Aleutian Islands (US)
GS landforms
. islands
. . Aleutian Islands (US)
RT Alaska
archipelagoes
island arcs
United States

alexandrite
(added November 1992)
DEF A transparent variety of chrysoberl that has a grass-green or emerald green color in daylight and wine-red to brownish-red color by transmitted or incandescent artificial light.
GS aluminum compounds
. aluminum oxides
. . alexandrite
. beryl
. . alexandrite
beryllium compounds
. beryl
. . alexandrite
. beryllium oxides
. . alexandrite
chalcogenides
. oxides
. . metal oxides
. . . alkaline earth oxides
. . . . beryllium oxides
. . . . . alexandrite
. . . aluminum oxides
. . . . alexandrite
minerals
. beryl
. . alexandrite
silicon compounds
. silicates
. . beryl
. . . alexandrite
RT laser materials

alfalfa
GS farm crops
. alfalfa
plants (botany)
. alfalfa
RT agriculture
blight
botany
crop growth
crop vigor
∞ crops
curing
Earth resources
∞ food
grasses
irrigation
seeds

Alfven waves
USE magnetohydrodynamic waves

AlGaAs
USE aluminum gallium arsenides

algae
DEF Any plants of a group of unicellular and multicellular primitive organisms that include the Chlorella, Scenedesmus, and other genera. Used for algal bloom.
UF *algal bloom*
diatoms (unicellular plants)
GS plants (botany)
. algae
. . blue green algae
. . . anabaena
. . . Microcystis
. . . Nostoc
. . Chlorella
. . Dunaliella
. . porphyra
. . scenedesmus
RT biochemical oxygen demand
bioconversion
chlorophylls
Euglena
lichens
marine biology
microorganisms
photosynthesis
phytoplankton
plankton
thermophiles
thermophilic plants
water pollution

algal bloom
USE algae

algebra
GS algebra
. binomial theorem
. current algebra
. determinants
. group theory
. . homomorphisms
. . . automorphisms
. . . monoids
. . . subgroups
. lie groups
. . spinor groups
. linear equations
. . linear evolution equations
. . Riccati equation
. linear transformations
. nonlinear equations
. . cubic equations
. . Duffing differential equation
. . Monge-Ampere equation
. . nonlinear evolution equations
. . quadratic equations
. . quartic equations
. polynomials
. . binomials
. . dyadics
. . Hermitian polynomial
. tensors
. . stress tensors
. vector spaces
. . Banach space
. . . Hilbert space
. . . . Sobolev space
. . matrices (mathematics)
. . . adjoints
. . . canonical forms
. . . eigenvalues
. . . eigenvectors
. . . Hessian matrices
. . . Jordan form
. . . stiffness matrix
. . Stokes theorem (vector calculus)
. . U spin space
. . vectors (mathematics)
. . . eigenvectors
. . . state vectors
. . . vorticity
RT analysis (mathematics)
∞ analyzing
Boolean algebra
coordinates
functions (mathematics)
homotropy
∞ mathematics
Schwartz inequality
∞ science
semiempirical equations
∞ space
sums
uniqueness theorem

Algeria
GS nations
. Algeria
RT Africa

ALGOL
UF *algorithmic oriented language*
GS languages
. programming languages
. . ALGOL
RT computer programming
machine oriented languages

Algol engine
GS engines
. rocket engines
. . booster rocket engines
. . . Algol engine
. . solid propellant rocket engines
. . . Algol engine
RT Blue Scout rocket vehicle
Little Joe 2 launch vehicle
Scout launch vehicle

algorithmic oriented language
USE ALGOL

algorithms
DEF Special mathematical procedures for solving a particular type of problem.
GS mathematical logic
. algorithms
. . genetic algorithms
. . parsing algorithms
. . simplex method
. . sorting algorithms
RT computer programming
computer programs
computer systems programs
computerized simulation
conjugate gradient method
data conversion routines
differential analyzers
factorization
fuzzy sets
fuzzy systems
Hessian matrices
mean square values
numerical analysis
numerical differentiation
parameterization
robustness (mathematics)
state estimation
systolic arrays

alignment
GS alignment
. self alignment
RT adjusting
bearing (direction)

clearances
collimation
correction
directivity
fitting
horizontal orientation
instrument orientation
look angles (electronics)
∞ orientation
ply orientation
polarization (spin alignment)
positioning
vertical orientation

∞ aliphatic compounds
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aliphatic hydrocarbons
amines
fatty acids
molecular chains
organic compounds

aliphatic hydrocarbons
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . butanes
. . . . cetane
. . . . ethane
. . . . heptanes
. . . . methane
. . . . nitropropane
. . . . nonanes
. . . . octanes
. . . . paraffins
. . . . . ceresin
. . . . pentanes
. . . . . neopentane
. . . . propane
. . . alkenes
. . . . butenes
. . . . ethylene
. . . . . vinylidene
. . . . hexenes
. . . . propylene
. . . . trienes
. . . alkynes
. . . . acetylene
. . . . oxyacetylene
. . . dienes
. . . . butadiene
. . . . heptadiene
. . . . hexadiene
. . . . polybutadiene
RT ∞ aliphatic compounds
terpenes

alkali halides
GS halogen compounds
. halides
. . metal halides
. . . alkali halides
. . . . cesium halides
. . . . . cesium bromides
. . . . . cesium fluorides
. . . . . cesium iodides
. . . . potassium iodides
. . . . sodium bromides
. . . . sodium chlorides
. . . . sodium fluorides
. . . . sodium iodides

∞ alkali metal compounds
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *Group 1A compounds*
RT cesium compounds
∞ chemical compounds
lithium compounds
∞ metal compounds
potassium compounds
rubidium compounds
sodium compounds

alkali metals
DEF Metals in group IA of the periodic system, namely, lithium, sodium, potassium, rubidium, cesium, and francium.
GS chemical elements
. alkali metals
. . cesium
. . . cesium isotopes
. . . . cesium 133
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144
. . cesium vapor
. . francium
. . lithium
. . . liquid lithium
. . . lithium isotopes
. . potassium
. . . liquid potassium
. . . potassium isotopes
. . . . potassium 38
. . . . potassium 39
. . . . potassium 40
. . rubidium
. . . rubidium isotopes
. . . . rubidium 86
. . sodium
. . . liquid sodium
. . . sodium isotopes
. . . . sodium 22
. . . . sodium 24
. . . sodium vapor
metals
. alkali metals
. . cesium
. . . cesium isotopes
. . . . cesium 133
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144
. . cesium vapor
. . francium
. . lithium
. . . liquid lithium
. . . lithium isotopes
. . potassium
. . . liquid potassium
. . . potassium isotopes
. . . . potassium 38
. . . . potassium 39
. . . . potassium 40
. . rubidium
. . . rubidium isotopes
. . . . rubidium 86
. . sodium
. . . liquid sodium
. . . sodium isotopes
. . . . sodium 22
. . . . sodium 24
. . . sodium vapor
RT cesium alloys
metal vapors

alkali vapor lamps
DEF Lamps in which light is produced by an electric discharge between electrodes in an alkali vapor at low or high pressures.
GS lighting equipment
. luminaires
. . flash lamps
. . . alkali vapor lamps
RT lasers
luminescence
metal vapors
rare earth elements

alkalies
UF *caustics*
GS bases (chemical)
. alkalies
. . lithium hydroxides
. . potassium hydroxides
. . sodium hydroxides
RT alkalinity
carbonates
hydroxides

alkaline batteries
GS electric generators
. direct power generators
. . primary batteries
. . . alkaline batteries
electrochemical cells
. electric batteries
. . primary batteries
. . . alkaline batteries
RT storage batteries
thermal batteries

∞ alkaline earth compounds
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *Group 2A compounds*
RT alkaline earth metals
alkaline earth oxides
barium compounds
beryllium compounds
calcium compounds
∞ chemical compounds
magnesium compounds
strontium compounds
strontium oxides

alkaline earth metals
GS chemical elements
. alkaline earth metals
. . barium isotopes
metals
. alkaline earth metals
. . barium isotopes
RT ∞ alkaline earth compounds

alkaline earth oxides
GS chalcogenides
. oxides
. . metal oxides
. . . alkaline earth oxides
. . . . barium oxides
. . . . beryllium oxides
. . . . . alexandrite
. . . . calcium oxides
. . . . . akermanite
. . . . magnesium oxides
. . . . . akermanite
. . . . . periclase
RT ∞ alkaline earth compounds

alkalinity
DEF The state of being alkaline.
RT alkalies
bases (chemical)

chemical analysis
chemical composition
pH
salinity
soil sampling
water pollution
water quality

alkaloids
GS bases (chemical)
. **alkaloids**
. . atropine
. . betaines
. . caffeine
. . colchicine
. . ergotamine
. . hyoscine
. . lysergine
. . morphine
. . nicotinamide
. . nicotine
. . pilocarpine
. . reserpine
. . strychnine
. . tropyl compounds
nitrogen compounds
. **alkaloids**
. . atropine
. . betaines
. . caffeine
. . colchicine
. . ergotamine
. . hyoscine
. . lysergine
. . morphine
. . nicotinamide
. . nicotine
. . pilocarpine
. . reserpine
. . strychnine
. . tropyl compounds
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **alkaloids**
. . . . atropine
. . . . betaines
. . . . caffeine
. . . . colchicine
. . . . ergotamine
. . . . hyoscine
. . . . lysergine
. . . . morphine
. . . . nicotinamide
. . . . nicotine
. . . . pilocarpine
. . . . reserpine
. . . . strychnine
. . . . tropyl compounds
RT curare
drugs
marijuana
quinoline

alkaloids
RT acidosis
hyperventilation
pH
pH factor
toxicity

alkanes
UF *saturated hydrocarbons*
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . **alkanes**
. . . . butanes
. . . . cetane
. . . . ethane
. . . . heptanes
. . . . methane
. . . . nitropropane
. . . . nonanes
. . . . octanes
. . . . paraffins
. . . . . ceresin
. . . . pentanes
. . . . . neopentane
. . . . propane
RT hydrocarbon fuels
waxes

alkenes
UF *olefins*
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . **alkenes**
. . . . butenes
. . . . ethylene
. . . . . vinylidene
. . . . hexenes
. . . . propylene
. . . . trienes
RT alkynes
oxetane polymers
terpenes

alkoxides
(added January 1995)
UF *alcoholates*
GS chalcogenides
. oxides
. . **alkoxides**
RT alcohols
organometallic compounds
sol–gel processes

alkyd resins
GS resins
. **alkyd resins**
RT adhesives
protective coatings

alkyl compounds
GS **alkyl compounds**
. alkylidene
. cetyl compounds
. dibutyl compounds
. hexyl compounds
. isopropyl nitrate
. methyl nitrate
. propyl nitrate
. tetrabutyls
. triethyl compounds
. trimethyl compounds
RT ∞ chemical compounds
organic compounds

alkylates
GS esters
. **alkylates**
RT alkylation

alkylation
UF *oxyalkylation*
GS chemical reactions
. **alkylation**
RT alkylates
Friedel–Craft reaction
methylation
refining

alkylferrocene
GS iron compounds
. ferrocenes
. . **alkylferrocene**
organometallic compounds
. ferrocenes
. . **alkylferrocene**

alkylidene
GS alkyl compounds
. **alkylidene**

alkynes
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . **alkynes**
. . . . acetylene
. . . . oxyacetylene
RT alkanes
cyclic AMP
cyclic hydrocarbons

all sky photography
GS imagery
. photography
. . **all sky photography**
RT black and white photography
cloud photographs
cloud photography
wide angle lenses

all–weather air navigation
GS navigation
. air navigation
. . **all–weather air navigation**
RT Doppler navigation
inertial navigation
navigation aids
radar navigation
radio navigation
solar compasses
Tacan

all–weather landing systems
GS landing aids
. instrument landing systems
. . **all–weather landing systems**
RT aircraft landing
aircraft safety
flight safety
low visibility
∞ systems

Allegheny Plateau (US)
GS land
. **Allegheny Plateau (US)**
landforms
. terraces (landforms)
. . plateaus
. . . **Allegheny Plateau (US)**
RT Maryland
Pennsylvania
Virginia
West Virginia

Allende meteorite
GS celestial bodies
. meteorites
. . stony meteorites
. . . carbonaceous meteorites
. . . . carbonaceous chondrites
. . . . . **Allende meteorite**
. . . chondrites
. . . . carbonaceous chondrites
. . . . . **Allende meteorite**

allergic diseases
RT anaphylaxis

contact dermatitis
immunology

allocations
UF *assignment*
GS **allocations**
. resource allocation
RT allowances
budgeting
commercial energy
cost effectiveness
distributing
∞ distribution
domestic energy
economic analysis
economic factors
engineering management
estimates
federal budgets
financial management
industrial energy
matrix management
procurement management
project planning
research management
revenue
transportation energy

allotropy
RT austenite
crystal structure
polymorphism

allowances
RT allocations
clearances
∞ compensation
precision
productivity
regulations
reliability
sampling
tolerances (mechanics)

alloxan
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . pyrimidines
. . . . **alloxan**
RT thymidine
thymine
uracil
uric acid

alloying
RT additives
alloys
aluminum–lithium alloys
bimetals
binary alloys
eutectic alloys
eutectics
intermetallics
∞ metallurgy
powder metallurgy
pyrometallurgy
quaternary alloys
solid solutions
ternary alloys

alloys
DEF Substances having metallic properties and being composed of two or more chemical elements of which at least one is an elemental metal.
GS **alloys**
. antimony alloys
. . babbitt metal
. arsenic alloys
. barium alloys
. bearing alloys
. binary alloys
. bismuth alloys
. boron alloys
. cadmium alloys
. cast alloys
. cesium alloys
. chromium alloys
. . Astroloy (trademark)
. . chromium steels
. . Rene 41
. . Rene 63
. . Rene 77
. . Rene 95
. cobalt alloys
. . Astroloy (trademark)
. . Rene 41
. . Rene 63
. . Rene 77
. . Rene 95
. constantan
. copper alloys
. . babbitt metal
. . brasses
. . bronzes
. . Manganin (trademark)
. eutectic alloys
. gallium alloys
. germanium alloys
. gold alloys
. hafnium alloys
. heat resistant alloys
. . nimonic alloys
. . refractory metal alloys
. . . molybdenum alloys
. . . . Rene 41
. . . . Rene 63
. . . . Rene 77
. . . . Rene 95
. . . niobium alloys
. . . osmium alloys
. . . rhenium alloys
. . . tantalum alloys
. . . tungsten alloys
. . Udimet alloys
. . Waspaloy
. high strength alloys
. . Astroloy (trademark)
. . high strength steels
. . . maraging steels
. indium alloys
. iridium alloys
. iron alloys
. . steels
. . . bainitic steel
. . . carbon steels
. . . . low carbon steels
. . . chromium steels
. . . Croloy
. . . high strength steels
. . . . maraging steels
. . . nickel steels
. . . stainless steels
. . . . austenitic stainless steels
. . . . ferritic stainless steels
. . . . martensitic stainless steels
. Kovar (trademark)
. lead alloys
. light alloys
. . aluminum alloys
. . . aluminum–lithium alloys
. . beryllium alloys
. . magnesium alloys
. liquid alloys
. lithium alloys
. . aluminum–lithium alloys
. manganese alloys
. . Manganin (trademark)
. mercury alloys
. . mercury amalgams
. monotectic alloys
. mulberry (alloy)
. nickel alloys
. . Astroloy (trademark)
. . Hastelloy (trademark)
. . Inconel (trademark)
. . kamacite
. . Monel (trademark)
. . Nichrome (trademark)
. . nitinol alloys
. . Rene 41
. . Rene 63
. . Rene 77
. . Rene 95
. . Udimet alloys
. . Waspaloy
. palladium alloys
. Permalloys (trademark)
. platinum alloys
. plutonium alloys
. potassium alloys
. quaternary alloys
. rare earth alloys
. . erbium alloys
. . gadolinium alloys
. . lanthanum alloys
. . neodymium alloys
. rhodium alloys
. ruthenium alloys
. selenium alloys
. shape memory alloys
. . nitinol alloys
. silicon alloys
. silver alloys
. sodium alloys
. solders
. syntactic alloys
. tellurium alloys
. ternary alloys
. . Astroloy (trademark)
. thallium alloys
. thorium alloys
. tin alloys
. . babbitt metal
. titanium alloys
. . nitinol alloys
. uranium alloys
. vanadium alloys
. wrought alloys
. yttrium alloys
. zinc alloys
. zirconium alloys
. . Zircaloys (trademark)
. . . Zircaloy 2 (trademark)
RT alloying
bimetals
binary systems (materials)
dispersion strengthening
eutectic composites
eutectics
ferrous metals
hardeners
heat treatment
intermetallics
Kondo effect
liquid phases
metallography
metalloids
∞ metallurgy

metals
mixtures
oxide dispersion strengthening
phase diagrams
powder metallurgy
precipitates
rheocasting
solid solutions
stress relieving
ternary systems

alluvium
DEF Soil, the constituents of which have been transported in suspension by flowing water and subsequently deposited by sedimentation.
GS soils
. **alluvium**
RT clays
deltas
fans (landforms)
floods
gravels
hydrology
mud
rivers
sands
sedimentary rocks
sediments
streams
water flow

allyl compounds
RT∞ chemical compounds
diallyl compounds

almucantar
USE **elevation angle**

Aloha system
DEF A multiple random access communications scheme in which there is a nonfixed allocation of channel capacity, so that the channel is available to any terminal whenever it has a packet ready for transmission.
GS networks
. communication networks
. . **Aloha system**
telecommunication
. multiple access
. . **Aloha system**
. packet transmission
. . **Aloha system**
transmission
. signal transmission
. . data transmission
. . . multiple access
. . . . **Aloha system**
. . . packet transmission
. . . . **Aloha system**
RT channel capacity
channel noise
code division multiple access
computer networks
frequency division multiple access
packets (communication)
random access
satellite transmission
∞ systems
time division multiple access
transmission efficiency
VSAT (network)

Alouette 1 satellite
UF *S-27 satellite*
GS artificial satellites
. Alouette satellites
. . **Alouette 1 satellite**
Canadian spacecraft
. Alouette satellites
. . **Alouette 1 satellite**
. . Alouette satellites
. . . **Alouette 1 satellite**
RT ionospheric sounding

Alouette 2 satellite
GS artificial satellites
. Alouette satellites
. . **Alouette 2 satellite**
. ISIS satellites
. . **Alouette 2 satellite**
Canadian spacecraft
. Alouette satellites
. . **Alouette 2 satellite**
RT ionospheric sounding

Alouette 3 helicopter
USE **SE-3160 helicopter**

Alouette B satellite
GS artificial satellites
. Alouette satellites
. . **Alouette B satellite**
Canadian spacecraft
. Alouette satellites
. . **Alouette B satellite**
RT ISIS-X

Alouette helicopters
GS Sud Aviation aircraft
. **Alouette helicopters**
. . SA-330 helicopter
. . SE-3160 helicopter
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **Alouette helicopters**
. . . . SA-330 helicopter
. . . . SE-3160 helicopter
RT∞ aircraft

Alouette project
GS programs
. projects
. . **Alouette project**
. space programs
. . Canadian space program
. . . **Alouette project**
RT cosmic noise
data acquisition
ionospheric sounding
ISIS-A

Alouette satellites
GS artificial satellites
. **Alouette satellites**
. . Alouette 1 satellite
. . Alouette 2 satellite
. . Alouette B satellite
Canadian spacecraft
. **Alouette satellites**
. . Alouette 1 satellite
. . Alouette 2 satellite
. . Alouette B satellite
RT ISIS satellites

alpha decay
DEF The radioactive transformation of a nuclide by alpha-particle emission.
GS decay
. radioactive decay
. . **alpha decay**
nuclear reactions
. radioactive decay
. . **alpha decay**
RT fine structure
selection rules (nuclear physics)

Alpha jet aircraft
GS attack aircraft
. fighter aircraft
. . **Alpha jet aircraft**
jet aircraft
. **Alpha jet aircraft**
training aircraft
. **Alpha jet aircraft**
RT∞ aircraft
∞ military aircraft

alpha particles
SN (EMITTED BY NUCLEI)
DEF Positively charged particles emitted from the nuclei of certain atoms during radioactive disintegration. Used for alpha radiation.
UF *alpha radiation*
GS ionizing radiation
. **alpha particles**
particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **alpha particles**
. corpuscular radiation
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **alpha particles**
. elementary particles
. . bosons
. . . **alpha particles**
. nuclear particles
. . bosons
. . . **alpha particles**
RT alphatrons
corpuscular radiation
cosmic rays
deuteron irradiation
deuterons
flux density
helium
helium ions
ions
nuclear radiation
nucleons
protons
∞ radiation
radioactivity
solar wind velocity
tritons

alpha plasma devices
GS plasma accelerators
. **alpha plasma devices**
RT∞ devices
Hall accelerators
magnetohydrodynamics
plasma physics
plasmas (physics)

alpha radiation
USE **alpha particles**

alphabets
RT abbreviations
alphanumeric characters
coding
languages
symbols

alphanumeric characters
DEF Characters in a set that contain both letters and digits, but they usually also contain other characters such as punctuation symbols.
GS symbols
. **alphanumeric characters**
. . digits
. . . binary digits
RT alphabets
instruction sets (computers)

light emitting diodes
∞ numbers

alphatrons
GS measuring instruments
. pressure gages
. . vacuum gages
. . . ionization gages
. . . . alphatrons
vacuum apparatus
. vacuum gages
. . ionization gages
. . . alphatrons
RT alpha particles

Alpine meteorology
DEF Wind, precipitation, atmospheric physics, and other climatological phenomena peculiar to the Alps and/or other similar mountainous areas.
GS meteorology
. Alpine meteorology
RT aeronomy
clouds (meteorology)
nephanalysis
precipitation (meteorology)
storms (meteorology)
weather
wind (meteorology)

Alps Mountains (Europe)
GS landforms
. mountains
. . Alps Mountains (Europe)
RT Austria
Europe
Italy
Switzerland
West Germany

ALS (launch system)
USE Advanced Launch System (STS)

ALSEP
USE Apollo Lunar Surface Experiments Package

Altair engine
USE X-248 engine

alteration
USE revisions

alternating current
UF *AC (current)*
GS electric current
. alternating current
electricity
. alternating current
RT current converters (AC to DC)
direct current
induction motors
inverted converters (DC to AC)
voltage converters (AC to AC)

alternating current generators
USE AC generators

alternating direction implicit methods
UF *ADI methods*
GS problem solving
. alternating direction implicit methods
RT differential equations
numerical analysis
partial differential equations

alternations
GS variations
. periodic variations
. . alternations
RT cycles
intervals
rhythm (biology)

alternatives
RT options
substitutes
variations

alternators (generators)
USE AC generators

altimeters
DEF Instruments for measuring height above a reference datum.
GS measuring instruments
. distance measuring equipment
. . altimeters
. . . laser altimeters
. . . radio altimeters
RT aircraft instruments
altimetry
altitude
approach indicators
astrolabes
barometers
flight instruments
hypsometers
landing instruments
navigation aids
navigation instruments
position indicators
range finders
rate of climb indicators
satellite altimetry

altimetry
GS altimetry
. satellite altimetry
RT altimeters
altitude
elevation
geodesy
geoids
radar measurement
topography

altitude
DEF In astronomy, angular displacement above the horizon. Also height, especially radial distance as measured above a given datum, as average sea level.
GS altitude
. flight altitude
. high altitude
. low altitude
. midaltitude
. sea level
RT altimeters
altimetry
apexes
azimuth
distance
elevation
elevation angle
height
position (location)

altitude acclimatization
DEF A physiological adaptation to reduced atmospheric and oxygen pressure.
GS adaptation
. acclimatization
. . altitude acclimatization
RT mountain inhabitants

altitude control
RT ∞ control
laser altimeters
lateral control
longitudinal control
spacing

altitude sicknesses
DEF In general, any sickness brought on by exposure to reduced oxygen tension and barometric pressure.
GS sicknesses
. altitude sickness
RT aeroembolism
aerosinusitis
aerospace medicine
decompression sickness

altitude simulation
UF *simulated altitude*
GS simulation
. environment simulation
. . altitude simulation
RT computerized simulation
flight simulation
high altitude environments
hypobaric atmospheres
landing simulation
space environment simulation
thermal simulation
training devices
vacuum chambers

altitude tests
GS altitude tests
. high altitude tests
RT engine tests
flight tests
full scale tests
high altitude environments
test vehicles
∞ tests

altitude tolerance
GS tolerances (physiology)
. altitude tolerance
RT high altitude breathing
high altitude environments
high altitude pressure
hypobaric atmospheres
low pressure

ALU (computer components)
USE arithmetic and logic units

alum
GS aluminum compounds
. alum
potassium compounds
. alum
sulfur compounds
. sulfates
. . alum

alumina
USE aluminum oxides

aluminates
GS aluminum compounds
. aluminates
RT aluminum oxides
∞ oxygen compounds
spinel

aluminides
DEF Intermetallic compounds of aluminum and a transition metal.
GS aluminum compounds
. aluminides

. . nickel aluminides
. . titanium aluminides
RT aluminum alloys
aluminum coatings
heat resistant alloys
intermetallics
nickel alloys
protective coatings
titanium alloys

aluminizing
USE **aluminum coatings**

aluminum
GS chemical elements
. **aluminum**
. . aluminum isotopes
. . . aluminum 26
. . . aluminum 27
metals
. **aluminum**
. . aluminum isotopes
. . . aluminum 26
. . . aluminum 27
RT aluminum alloys
Boral
Borsic (tradename)
cryolite
dawsonite
powdered aluminum
reaction bonding
sialon
sintered aluminum powder

aluminum 26
GS chemical elements
. aluminum
. . aluminum isotopes
. . . **aluminum 26**
. nuclides
. . isotopes
. . . aluminum isotopes
. . . . **aluminum 26**
metals
. aluminum
. . aluminum isotopes
. . . **aluminum 26**

aluminum 27
GS chemical elements
. aluminum
. . aluminum isotopes
. . . **aluminum 27**
. nuclides
. . isotopes
. . . aluminum isotopes
. . . . **aluminum 27**
metals
. aluminum
. . aluminum isotopes
. . . **aluminum 27**

aluminum alloys
GS alloys
. light alloys
. . **aluminum alloys**
. . . aluminum–lithium alloys
RT aluminides
aluminum
bearing alloys
gallium alloys
indium alloys
lamella (metallurgy)
lithium alloys
silicon alloys
vanadium alloys

aluminum antimonides
GS aluminum compounds
. **aluminum antimonides**
antimony compounds
. antimonides
. . **aluminum antimonides**

aluminum arsenides
DEF Binary compounds of aluminum with negative, trivalent arsenic.
GS aluminum compounds
. **aluminum arsenides**
. . aluminum gallium arsenides
. . indium aluminum arsenides
arsenic compounds
. arsenides
. . **aluminum arsenides**
. . . aluminum gallium arsenides
. . . indium aluminum arsenides
RT semiconductors (materials)

aluminum borohydrides
GS aluminum compounds
. aluminum hydrides
. . **aluminum borohydrides**
boron compounds
. borohydrides
. . **aluminum borohydrides**
. boron hydrides
. . **aluminum borohydrides**
hydrogen compounds
. hydrides
. . borohydrides
. . . **aluminum borohydrides**
. . boron hydrides
. . . **aluminum borohydrides**
. . metal hydrides
. . . aluminum hydrides
. . . . **aluminum borohydrides**

aluminum boron composites
DEF Structural materials composed of aluminum alloys reinforced with boron fibers (filaments).
GS composite materials
. boron reinforced materials
. . **aluminum boron composites**
. metal matrix composites
. . **aluminum boron composites**
RT boron fibers
fiber composites

aluminum carbides
GS aluminum compounds
. **aluminum carbides**
carbon compounds
. carbides
. . **aluminum carbides**

aluminum chlorides
GS aluminum compounds
. **aluminum chlorides**
halogen compounds
. chlorine compounds
. . chlorides
. . . **aluminum chlorides**
. halides
. . chlorides
. . . **aluminum chlorides**
. . metal halides
. . . **aluminum chlorides**

aluminum coatings
UF *aluminizing*
GS coatings
. metal coatings
. . **aluminum coatings**
RT aluminides

aluminum compounds
GS **aluminum compounds**
. alum
. aluminates
. aluminides
. . nickel aluminides
. . titanium aluminides
. aluminum antimonides
. aluminum arsenides
. . aluminum gallium arsenides
. . indium aluminum arsenides
. aluminum carbides
. aluminum chlorides
. aluminum fluorides
. aluminum hydrides
. . aluminum borohydrides
. aluminum nitrides
. aluminum oxides
. . alexandrite
. . sapphire
. aluminum perchlorates
. aluminum silicates
. . andesite
. . gehlenite
. . kaolinite
. . montmorillonite
. . pyrophyllite
. beryl
. . alexandrite
. cordierite
. cryolite
. feldspars
. lithium aluminum hydrides
. muscovite
. nepheline
. nephelite
. organic aluminum compounds
. spodumene
. tourmaline
RT ∞ chemical compounds
Group 3A compounds
∞ metal compounds
metal fuels
metal propellants

aluminum fluorides
GS aluminum compounds
. **aluminum fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **aluminum fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **aluminum fluorides**
. . metal halides
. . . metal fluorides
. . . . **aluminum fluorides**

aluminum gallium arsenide lasers
(added November 1991)
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . semiconductor lasers
. . . . **aluminum gallium arsenide lasers**
. . solid state lasers
. . . **aluminum gallium arsenide lasers**
stimulated emission devices
. lasers
. . semiconductor lasers
. . . **aluminum gallium arsenide lasers**

. . solid state lasers
. . . **aluminum gallium arsenide lasers**
RT gallium arsenide lasers
injection lasers
waveguide lasers

aluminum gallium arsenides
DEF Compounds exhibiting characteristics suitable for use in laser devices, light-emitting diodes, solar cells, etc. Used for AlGaAs.
UF *AlGaAs*
GS aluminum compounds
. aluminum arsenides
. . **aluminum gallium arsenides**
arsenic compounds
. arsenides
. . aluminum arsenides
. . . **aluminum gallium arsenides**
. . gallium arsenides
. . . **aluminum gallium arsenides**
gallium compounds
. gallium arsenides
. . **aluminum gallium arsenides**
RT MODFETS
negative resistance devices

aluminum graphite composites
DEF Structural materials composed of aluminum alloys reinforced with graphite.
GS composite materials
. metal matrix composites
. . **aluminum graphite composites**
RT fiber composites
graphite

aluminum hydrides
GS aluminum compounds
. **aluminum hydrides**
. . aluminum borohydrides
hydrogen compounds
. hydrides
. . metal hydrides
. . . **aluminum hydrides**
. . . . aluminum borohydrides

aluminum isotopes
GS chemical elements
. aluminum
. . **aluminum isotopes**
. . . aluminum 26
. . . aluminum 27
. nuclides
. . isotopes
. . . **aluminum isotopes**
. . . . aluminum 26
. . . . aluminum 27
metals
. aluminum
. . **aluminum isotopes**
. . . aluminum 26
. . . aluminum 27

aluminum nitrides
GS aluminum compounds
. **aluminum nitrides**
nitrogen compounds
. nitrides
. . metal nitrides
. . . **aluminum nitrides**

aluminum oxides
UF *alumina*
corundum
GS aluminum compounds
. **aluminum oxides**
. . alexandrite
. . sapphire
chalcogenides
. oxides
. . metal oxides
. . . **aluminum oxides**
. . . . alexandrite
. . . . sapphire
RT abrasives
aluminates
bauxite
energy absorption films
gehlenite
kaolinite
pyrophyllite
ruby
thermites

aluminum perchlorates
GS aluminum compounds
. **aluminum perchlorates**
halogen compounds
. chlorine compounds
. . perchlorates
. . . **aluminum perchlorates**

aluminum silicates
GS aluminum compounds
. **aluminum silicates**
. . andesite
. . gehlenite
. . kaolinite
. . montmorillonite
. . pyrophyllite
silicon compounds
. silicates
. . **aluminum silicates**
. . . andesite
. . . gehlenite
. . . kaolinite
. . . montmorillonite
. . . pyrophyllite
RT minerals
mullites

aluminum–lithium alloys
(added August 1991)
DEF Light alloys consisting primarily of aluminum and lithium.
GS alloys
. light alloys
. . aluminum alloys
. . . **aluminum–lithium alloys**
. lithium alloys
. . **aluminum–lithium alloys**
RT aircraft construction materials
airframe materials
alloying
copper alloys
high strength alloys
magnesium alloys

alveolar air
DEF The respiratory air in the alveoli (air sacs) deep within the lungs.
GS gases
. gas mixtures
. . air
. . . **alveolar air**
mixtures
. solutions
. . gas mixtures
. . . air
. . . . **alveolar air**
RT exhalation
expired air
lungs

alveoli
DEF The terminal air sacs deep within the lungs.
GS anatomy
. respiratory system
. . lungs
. . . **alveoli**
RT lung morphology
pulmonary circulation
pulmonary functions
respiration

AM (modulation)
USE **amplitude modulation**

amalgams
USE **mercury amalgams**

Amalthea
DEF Innermost satellite of Jupiter.
GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . **Amalthea**
RT Jupiter (planet)
solar system

Amazon region (South America)
GS regions
. tropical regions
. . **Amazon region (South America)**
RT Brazil
forests
river basins
rivers

Amberlite (trademark)
RT asbestos
thermal insulation

ambience
RT acoustic measurement
environmental monitoring
environments
noise (sound)
pollution monitoring

ambient temperature
DEF Temperature of surrounding medium. Used for environmental temperature.
UF *environmental temperature*
GS temperature
. **ambient temperature**
RT atmospheric temperature
operating temperature
room temperature
satellite temperature

ambiguity
RT intelligibility
positioning

ambipolar diffusion
GS diffusion
. **ambipolar diffusion**
RT electron diffusion
electron mobility
ionic diffusion
ionic mobility
plasma diffusion

ambit
USE **field theory (physics)**

ambulances
RT medical services
∞ military vehicles
safety devices

American Indians
RT anthropology
culture (social sciences)
ethnic factors
minorities
races (anthropology)

americium
GS chemical elements
. actinide series
. . transuranium elements
. . . **americium**
. . . . americium isotopes
. . . . . americium 241
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . **americium**
. . . . . americium isotopes
. . . . . americium 241
metals
. actinide series
. . transuranium elements
. . . **americium**
. . . . americium isotopes
. . . . . americium 241

americium 241
GS chemical elements
. actinide series
. . transuranium elements
. . . americium
. . . . americium isotopes
. . . . . **americium 241**
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . americium
. . . . . americium isotopes
. . . . . **americium 241**
metals
. actinide series
. . transuranium elements
. . . americium
. . . . americium isotopes
. . . . . **americium 241**

americium isotopes
GS chemical elements
. actinide series
. . transuranium elements
. . . americium
. . . . **americium isotopes**
. . . . . americium 241
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . americium
. . . . . **americium isotopes**
. . . . . americium 241
metals
. actinide series
. . transuranium elements
. . . americium
. . . . **americium isotopes**
. . . . . americium 241

amidase
GS biopolymers
. proteins
. . enzymes
. . . **amidase**
organic compounds
. proteins
. . enzymes
. . . **amidase**
RT amino acids

amides
GS nitrogen compounds
. **amides**
. . acetanilide
. . acetazolamide
. . carbamides
. . cyanamides
. . formhydroxamic acid
. . nicotinamide
. . oxamic acids
. . polyimides
. . . bismaleimide
. . . Kapton (trademark)
. . succinimides
. . ureas
. . . difluorourea
. . . thioureas
. . . thiuronium
RT imides

amines
GS **amines**
. aminophylline
. amphetamines
. . methamphetamine
. aniline
. catecholamine
. . epinephrine
. . . norepinephrine
. cysteamine
. diamines
. . ethylenediamine
. . guanidines
. . . guanethidine
. . . triaminoguanidinium azide
. difluorourea
. dimenhydrinate
. dimethylhydrazines
. diphenyl hydantoin
. ergotamine
. fluoroamines
. . nitrofluoramines
. . trifluoroamine oxide
. gallamine triethiodide
. hexamethylenetetramine
. histidine
. hydroxylamine sulfate
. hyoscine
. mecamylamine
. melamine
. methylene diamine
. monoethanolamine (MEA)
. nitroamines
. nitrosamine
. promethazine
. tetrafluorohydrazine
. tetryl
. thiuronium
. trinitramine
. tryptamines
. . serotonin
RT ∞ aliphatic compounds
histamines
hydrazines
hydrocarbon fuels
imines
Lewis base
nitrosyls
phenolic epoxy resins
rhodamine

amino acids
GS acids
. **amino acids**
. . alanine
. . . phenylalanine
. . aspartic acid
. . cysteine
. . dopa
. . folic acid
. . glutamic acid
. . glutamine
. . glycine
. . hippuric acid
. . histidine
. . leucine
. . . norleucine
. . lysine
. . melanoidin
. . methionine
. . thyroxine
. . tryptophan
. . tyrosine
organic compounds
. **amino acids**
. . alanine
. . . phenylalanine
. . aspartic acid
. . cysteine
. . dopa
. . folic acid
. . glutamic acid
. . glutamine
. . glycine
. . hippuric acid
. . histidine
. . leucine
. . . norleucine
. . lysine
. . melanoidin
. . methionine
. . thyroxine
. . tryptophan
. . tyrosine
RT adenosine triphosphate
adrenocorticotropin (ACTH)
amidase
aspartates
cyclic AMP
cysteamine
lipids
peptides
polypeptides
protoproteins
synthetic food
uridylic acid

amino radical
GS hydrogen compounds
. hydrides
. . nitrogen hydrides
. . . **amino radical**
nitrogen compounds
. nitrogen hydrides
. . **amino radical**
radicals
. **amino radical**
RT ammonia
anions
free radicals
molecular ions
reaction kinetics

aminophylline
GS amines
. **aminophylline**
diuretics
. **aminophylline**
drugs

. aminophylline
RT stimulants

ammeters
DEF An instrument for measuring the magnitude of an electric current.
GS measuring instruments
. ammeters
. . micromilliammeters
. . thermoelement ammeters
RT coulometers
electric current
electrical measurement
galvanometers
voltmeters

amminos
RT ammonia
∞ chemical compounds
copper
intermetallics
∞ metal compounds

ammonia
GS gases
. ammonia
. . liquid ammonia
inorganic compounds
. ammonia
. . liquid ammonia
nitrogen compounds
. ammonia
. . liquid ammonia
RT absorption cooling
amino radical
amminos
ammonium compounds
ammonolysis
atmospheric energy sources
cultivation
fertilizers
Kjeldahl method
nitrogen hydrides
refrigerants

ammonium bromides
GS ammonium compounds
. ammonium bromides
halogen compounds
. bromine compounds
. . bromides
. . . ammonium bromides
. halides
. . bromides
. . . ammonium bromides

ammonium chlorides
GS ammonium compounds
. ammonium chlorides
halogen compounds
. chlorine compounds
. . chlorides
. . . ammonium chlorides
. halides
. . chlorides
. . . ammonium chlorides

ammonium compounds
GS ammonium compounds
. ammonium bromides
. ammonium chlorides
. ammonium nitrates
. ammonium perchlorates
. ammonium phosphates
. ammonium picrates
. ammonium sulfates
. hydroxylammonium perchlorates
RT ammonia
∞ chemical compounds
hexamethonium

ammonium nitrates
GS ammonium compounds
. ammonium nitrates
nitrogen compounds
. nitrates
. . inorganic nitrates
. . . ammonium nitrates
RT cultivation
fertilizers

ammonium perchlorates
GS ammonium compounds
. ammonium perchlorates
halogen compounds
. chlorine compounds
. . perchlorates
. . . ammonium perchlorates
RT solid rocket propellants

ammonium phosphates
GS ammonium compounds
. ammonium phosphates
phosphorus compounds
. phosphates
. . ammonium phosphates

ammonium picrates
GS ammonium compounds
. ammonium picrates
nitrogen compounds
. nitro compounds
. . picrates
. . . ammonium picrates
RT explosives

ammonium sulfates
GS ammonium compounds
. ammonium sulfates
sulfur compounds
. sulfates
. . ammonium sulfates

ammonolysis
GS chemical reactions
. ammonolysis
decomposition
. ammonolysis
RT ammonia
cracking (chemical engineering)
hydrolysis

ammunition
GS ammunition
. incendiary ammunition
RT blanks
bombs (ordnance)
case bonded propellants
explosive devices
explosives
fuses (ordnance)
grenades
guns (ordnance)
igniters
magazines (supply chambers)
mines (ordnance)
missiles
ordnance
projectiles
propellants
pyrotechnics
∞ rockets
shaped charges
∞ shot
torpedoes
∞ tracers
warheads
weapons

amobarbital
GS acids
. amobarbital
RT central nervous system depressants

amoeba
GS animals
. protozoa
. . amoeba
. . . palomyxa
microorganisms
. protozoa
. . amoeba
. . . palomyxa
RT parasitic diseases

AMOOS
USE Aeromaneuvering Orbit to Orbit Shuttle

Amor asteroid
DEF One group of Earth-approaching asteroids with orbits between the planets Mars and Jupiter. Used for Minor Planet 1221.
UF *Minor Planet 1221*
GS celestial bodies
. asteroids
. . Amor asteroid
RT asteroid belts
astronomy
Jupiter (planet)
Mars (planet)
planetary orbits
solar system

amorphous materials
GS amorphous materials
. amorphous silicon
RT asphalt
crystallinity
glass
graphoepitaxy
grout
∞ materials
spin glass

amorphous semiconductors
GS semiconductors (materials)
. amorphous semiconductors
. . amorphous silicon
RT semiconducting films

amorphous silicon
GS amorphous materials
. amorphous silicon
chemical elements
. metalloids
. . silicon
. . . amorphous silicon
semiconductors (materials)
. amorphous semiconductors
. . amorphous silicon
RT diamond films
photovoltaic cells
semiconducting films
silicon films
silicon junctions
solar cells
thin films

amount
UF *quantity*
RT addition

sums
value

amperage
USE **electric current**

amphetamines
GS amines
. **amphetamines**
. . methamphetamine
RT central nervous system stimulants

amphibia
GS animals
. vertebrates
. . **amphibia**
. . . frogs
RT poikilothermia

amphibious aircraft
GS amphibious vehicles
. **amphibious aircraft**
RT ∞ aircraft
seaplanes
water takeoff and landing aircraft

amphibious vehicles
GS **amphibious vehicles**
. amphibious aircraft
RT boats
∞ military vehicles
seaplanes
ships
surface vehicles
∞ vehicles
water vehicles

amphiboles
DEF A group of dark, rock-forming, ferromagnesian silicate minerals closely related in crystal form and composition.
GS minerals
. **amphiboles**
RT calcium silicates
silicates

Amphitrite asteroid
GS celestial bodies
. asteroids
. . **Amphitrite asteroid**
RT asteroid belts
Galileo project

amplidynes
GS electric generators
. rotating generators
. . **amplidynes**
RT amplifiers
electric motors
power amplifiers
servomotors

amplification
UF *amplification factor*
gain (amplification)
intensification
GS **amplification**
. high gain
. power gain
. sound amplification
. wave amplification
RT amplifiers
amplitudes
dynamic characteristics
dynamic range
dynamic response
fluid amplifiers
fluidics
magnification
positive feedback
sensitivity
stability
transfer functions
transient response

amplification factor
USE **amplification**

amplifier design
RT amplifiers
computer aided design
∞ design
logic design
operational amplifiers
product development
traveling wave amplifiers

amplifiers
DEF Devices which enable an input signal to control a source of power whose output is an enlarged reproduction of the essential characteristics of the signal. Used for electronic amplifiers.
UF *electronic amplifiers*
GS **amplifiers**
. beam plasma amplifiers
. broadband amplifiers
. carcinotrons
. current amplifiers
. . photomultiplier tubes
. . . frequency modulation photomultipliers
. differential amplifiers
. distributed amplifiers
. feedback amplifiers
. fluid amplifiers
. . jet amplifiers
. intermediate frequency amplifiers
. light amplifiers
. limiter amplifiers
. linear amplifiers
. magnetic amplifiers
. magnetostatic amplifiers
. microwave amplifiers
. . crossed field amplifiers
. . cyclotron resonance devices
. . planotrons
. operational amplifiers
. parametric amplifiers
. postamplifiers
. power amplifiers
. preamplifiers
. push-pull amplifiers
. quantum amplifiers
. servoamplifiers
. transistor amplifiers
. traveling wave amplifiers
. voltage amplifiers
RT amplidynes
amplification
amplifier design
∞ boosters
capacitors
circuits
dynamic range
∞ electric cells
electric choppers
image intensifiers
intensifiers
klystrons
laser cavities
lasers
linear circuits
masers
modulators
multivibrators
oscillators
receivers
repeaters
solid state devices
stimulated emission devices
transformers
traveling wave masers

amplitrons (trademark)
USE **planotrons**

amplitude distribution analysis
UF *amplitude probability analysis*
GS statistical analysis
. **amplitude distribution analysis**
RT photopeak
pulse amplitude
signal to noise ratios
signatures

amplitude modulation
DEF In general, modulation in which the amplitude of a wave is the characteristic subject to variation.
UF *AM (modulation)*
GS coding
. signal encoding
. . **amplitude modulation**
. . . quadrature amplitude modulation
modulation
. **amplitude modulation**
. . quadrature amplitude modulation
RT Bragg cells
demodulation
demodulators
frequency modulation
light modulation
modulators
P.A.C.M. telemetry
phase modulation
pulse modulation
single sideband transmission

amplitude probability analysis
USE **amplitude distribution analysis**

amplitudes
DEF The maximum value of the displacement of a wave or other periodic phenomenon from a reference position. Also, angular distance north or south of the prime vertical; the arc of the horizon, or the angle at the zenith between the prime vertical and a vertical circle, measured north or south from the prime vertical to the vertical circle.
GS **amplitudes**
. pulse amplitude
. scattering amplitude
RT amplification
cycles
dimensions
displacement
frequencies
∞ intensity
level (quantity)
magnitude
oscillations
phase deviation
picosecond pulses
pulses
standing wave ratios
vibration

ampoules
DEF Glass containers designed to be filled and sealed by fusion of the glass neck.
RT ∞ containers
laboratory equipment
vacuum systems

AMPS (satellite payload)
UF *Atmospheric and Magnetospheric Payload*
plasmas–in–space payload
GS measuring instruments
. satellite–borne instruments
. . **AMPS (satellite payload)**
payloads
. Spacelab payloads
. . **AMPS (satellite payload)**
RT instrument packages

AMPTE (satellites)
SN (ACTIVE MAGNETOSPHERIC PARTICLE TRACER EXPLORERS)
UF *Active Magneto Particle Tracer Explorers*
GS artificial satellites
. scientific satellites
. . **AMPTE (satellites)**
RT Earth magnetosphere
European space programs
satellite–borne instruments
solar wind
space plasmas
spaceborne experiments

AMSU (radiometer)
USE **Advanced Microwave Sounding Unit**

AMTV
USE **automated mixed traffic vehicles**

AN–2 aircraft
GS Antonov aircraft
. **AN–2 aircraft**
biplanes
. **AN–2 aircraft**
transport aircraft
. **AN–2 aircraft**
RT agricultural aircraft
∞ aircraft

AN–22 aircraft
UF *Antheus aircraft*
Antonov AN–22 aircraft
Cock aircraft
GS Antonov aircraft
. **AN–22 aircraft**
jet aircraft
. turboprop aircraft
. . **AN–22 aircraft**
monoplanes
. **AN–22 aircraft**
transport aircraft
. **AN–22 aircraft**
RT ∞ aircraft
passenger aircraft

AN–24 aircraft
UF *Antonov AN–24 aircraft*
Coke aircraft
GS Antonov aircraft
. **AN–24 aircraft**
jet aircraft
. turboprop aircraft
. . **AN–24 aircraft**
monoplanes
. **AN–24 aircraft**
transport aircraft
. **AN–24 aircraft**
RT ∞ aircraft
passenger aircraft

anabaena
GS plants (botany)
. algae
. . blue green algae
. . . **anabaena**
. thermophilic plants
. . blue green algae
. . . **anabaena**

anaerobes
RT aerobes
bacteria
microorganisms
sewage treatment

analgesia
RT anesthesia
drugs
pain

analog circuits
GS circuits
. **analog circuits**
RT data converters
operational amplifiers
rheoelectrical simulation

analog computers
DEF Computers that work on the principle of measuring, as distinguished from counting, in which the input data is analogous to a measurement continuum such as linear lengths, voltages, or resistances which can be manipulated by the computer.
GS data processing equipment
. computers
. . **analog computers**
. . . EAI 680 computer
. . . Honeywell 600/6000 computer
. . . SIGMA 5 computer
. . . Univac 1100 series computers
. . . . Univac 1105 computer
. . . . Univac 1106 computer
. . . . Univac 1107 computer
. . . . Univac 1108 computer
. . . . Univac 1110 computer
RT differential amplifiers
differential analyzers
digital computers
discriminators
functional integration
hybrid computers
missile control
operational amplifiers
resolvers
signal analyzers
spectral resolution

analog data
RT binary data
∞ data
data converters
data processing
digital data
∞ measurement
video compression
video data

analog simulation
GS models
. mathematical models
. . **analog simulation**
simulation
. computerized simulation
. . **analog simulation**
RT computer systems simulation
digital simulation
flight simulation
rheoelectrical simulation
systems simulation

analog to digital converters
DEF Devices for converting non–digital information into digits. Used for digitizers.
UF digitizers
GS data converters
. **analog to digital converters**
RT coders
coding
∞ converters
data acquisition
digital computers
digital electronics
digital systems
digital to analog converters
Illiac 3 computer
Illiac 4 computer
peripheral equipment (computers)
plotting

analogies
UF *similarities*
GS **analogies**
. hydraulic analogies
RT comparison
homology
simulation

analogs
RT models
simulators

analysis
USE **analyzing**

analysis (mathematics)
DEF That part of the field of mathematics which arises from the calculus and which deals primarily with functions.
GS **analysis (mathematics)**
. aperiodic functions
. calculus
. . continuity (mathematics)
. . differential calculus
. . Fourier–Bessel transformations
. . Graeff calculus
. . integral calculus
. . limits (mathematics)
. . series (mathematics)
. . . asymptotic series
. . . Campbell–Hausdorff series
. . . cosine series
. . . Fourier series
. . . Pade approximation
. . . power series
. . . . Taylor series
. . . . . MacLaurin series
. . . progressions
. . . Prony series
. . . sine series
. . vector analysis
. . . collinearity
. . . coplanarity
. . . curl (vectors)
. . . . vorticity
. combinatorial analysis
. . binomial coefficients
. . combinations (mathematics)
. . factorials
. . partitions (mathematics)
. . permutations
. complex variables
. . Airy function
. . analytic functions
. . . entire functions
. . Bessel functions
. . . Hankel functions
. . Cauchy integral formula

. . conformal mapping
. . conjugates
. . . conjugate points
. . exponential functions
. . . logarithms
. . gamma function
. . harmonic functions
. . hyperbolic functions
. . hypergeometric functions
. . Laguerre functions
. . Legendre functions
. . Liouville theorem
. . Mathieu function
. . meromorphic functions
. . . elliptic functions
. . . rational functions
. . nonholonomic equations
. . orthogonal functions
. . . Walsh function
. . Schwarz–Christoffel transformation
. . singularity (mathematics)
. . . naked singularities
. . spherical harmonics
. dependent variables
. Fourier analysis
. . Fourier series
. function space
. . Banach space
. . . Hilbert space
. . . . Sobolev space
. functional analysis
. . Banach space
. . . Hilbert space
. . . . Sobolev space
. . convolution integrals
. . harmonic analysis
. . . tesseral harmonics
. . . zonal harmonics
. . integral equations
. . . Fredholm equations
. . . J integral
. . . singular integral equations
. . . Volterra equations
. . . Wiener Hopf equations
. . integral transformations
. . . Fourier transformation
. . . . fast Fourier transformations
. . . Fourier–Bessel transformations
. . . Hilbert transformation
. . . Laplace transformation
. half planes
. half spaces
. Hill determinant
. numerical analysis
. . approximation
. . . Born approximation
. . . Born–Oppenheimer approximation
. . . Chebyshev approximation
. . . Eddington approximation
. . . essentially non–oscillatory schemes
. . . finite difference theory
. . . finite element method
. . . Hartree approximation
. . . least squares method
. . . mean square values
. . . Milne method
. . . multigrid methods
. . . Newton methods
. . . . Newton–Raphson method
. . . discretization (mathematics)
. . . numerical differentiation
. . . Oseen approximation
. . . Pade approximation
. . . particle in cell technique
. . . Pohlhausen method
. . . predictor–corrector methods
. . . Rayleigh–Ritz method
. . . relaxation method (mathematics)
. . . Reynolds averaging
. . . Ritz averaging method
. . . Schwartz method
. . . Sommerfeld approximation
. . . TVD schemes
. . . upwind schemes (mathematics)
. . . vortex in cell technique
. . boundary integral method
. . computational astrophysics
. . computational chemistry
. . computational electromagnetics
. . computational fluid dynamics
. . difference equations
. . error analysis
. . finite volume method
. . flux difference splitting
. . flux vector splitting
. . Glimm method
. . Graeff calculus
. . interpolation
. . iteration
. . . conjugate gradient method
. . . iterative solution
. . . Newton methods
. . . . Newton–Raphson method
. . . predictor–corrector methods
. . Monte Carlo method
. . nomographs
. . numerical integration
. . . Runge–Kutta method
. . direct numerical simulation
. . truncation errors
. Pfaff equation
. phase–space integral
. real variables
. . Abel function
. . asymptotes
. . Bessel functions
. . . Hankel functions
. . Bethe–Salpeter equation
. . calculus of variations
. . composite functions
. . delta function
. . differential equations
. . . Blasius equation
. . . Chandrasekhar equation
. . . cosine series
. . . Duffing differential equation
. . . Falkner–Skan equation
. . . hyperbolic differential equations
. . . Lame wave equations
. . . partial differential equations
. . . . biharmonic equations
. . . . Burger equation
. . . . Cauchy–Riemann equations
. . . . elliptic differential equations
. . . . . Monge–Ampere equation
. . . . Euler–Cauchy equations
. . . . Fokker–Planck equation
. . . . Gauss equation
. . . . Helmholtz vorticity equation
. . . . Liouville equations
. . . . parabolic differential equations
. . . . Poisson equation
. . . . Vlasov equations
. . . Riccati equation
. . . vorticity equations
. . . . Helmholtz vorticity equation
. . Einstein equations
. . existence theorems
. . extremum values
. . . limits (mathematics)
. . . maxima
. . . . minima
. . . . Cramer–Rao bounds
. . Fourier–Bessel transformations
. . Green's functions
. . hyperbolic functions
. . hyperplanes
. . Jacobi integral
. . Jacobi matrix method
. . kernel functions
. . Liapunov functions
. . linear equations
. . . linear evolution equations
. . . Riccati equation
. . Lipschitz condition
. . measure and integration
. . . binary integration
. . . Borel sets
. . . functional integration
. . . integral calculus
. . . J integral
. . . Lebesgue theorem
. . . numerical integration
. . . . Runge–Kutta method
. . . Stieltjes integral
. . . weighting functions
. . Neumann problem
. . nonlinear equations
. . . cubic equations
. . . Duffing differential equation
. . . Monge–Ampere equation
. . . nonlinear evolution equations
. . . quadratic equations
. . . quartic equations
. . numerical differentiation
. . periodic functions
. . . trigonometric functions
. . . . cosine series
. . . . sine series
. . . . tangents
. . series (mathematics)
. . . asymptotic series
. . . Campbell–Hausdorff series
. . . cosine series
. . . Fourier series
. . . Pade approximation
. . . power series
. . . . Taylor series
. . . . . MacLaurin series
. . . progressions
. . . Prony series
. . . sine series
. . Sturm–Liouville theory
. . vector analysis
. . . collinearity
. . . coplanarity
. . . curl (vectors)
. . . . vorticity
. . Weierstrass functions
. . Whittaker functions

RT algebra
∞ analyzing
∞ applications of mathematics
discontinuity
equilibrium equations
geometry
∞ mathematics
monotone functions
∞ space
trees (mathematics)
vector spaces
Venn diagrams

analysis of variance

DEF A systematic statistical procedure for determining the sources and the magnitudes of the errors present in a measurement process, and

for assessing the significance of differences between materials, processes, or test methods under study.
GS statistical analysis
. variance (statistics)
. . analysis of variance
RT ∞ variance

analytic functions
UF *holomorphism*
GS analysis (mathematics)
. complex variables
. . analytic functions
. . . entire functions
functions (mathematics)
. analytic functions
. . entire functions
RT Cauchy–Riemann equations
isoperimetric problem
nonholonomic equations
power series

analytic geometry
GS geometry
. Euclidean geometry
. . analytic geometry
. . . catenaries
. . . circumferences
. . . conics
. . . . ellipses
. . . . hyperbolas
. . . . parabolas
. . . cycloids
. . . epicycloids
. . . loci
. . . Mercator projection
. . . quadrants
. . . S curves
. . . . Gompertz curves
. . . spheroids
. . . . oblate spheroids
. . . . prolate spheroids
. . . tangents
. . . toruses
. . . trigonometry
RT annuli
asymptotes
calculus
coordinates
curves (geometry)
∞ cylinders
descriptive geometry
differential geometry
polytopes
projective geometry

analytical chemistry
RT chemical analysis
∞ chemistry
inorganic chemistry
qualitative analysis
quantitative analysis
volumetric analysis

analyzers
SN (EXCLUDES DEVICES FOR PERFORMING MATHEMATICAL ANALYSIS)
GS measuring instruments
. analyzers
. . engine analyzers
. . signal analyzers
RT controllers
∞ detectors
monitors
selectors
∞ test equipment

∞ analyzing
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *analysis*
instrumental analysis
RT activation analysis
algebra
analysis (mathematics)
chemical analysis
combinatorial analysis
cost analysis
creep analysis
design analysis
diagnosis
differential geometry
duality principle
error analysis
evaluation
examination
failure analysis
figure of merit
forecasting
management analysis
multivariate statistical analysis
network analysis
numerical analysis
photointerpretation
postflight analysis
prediction analysis techniques
preflight analysis
reliability analysis
signal analysis
signature analysis
spectrum analysis
statistical analysis
stress analysis
structural analysis
systems analysis
terrain analysis
thermal analysis
training analysis
trajectory analysis
trend analysis
weight analysis
x ray analysis

anaphylaxis
GS sensitivity
. anaphylaxis
RT allergic diseases
antigens
immunology
sensitizing

anastigmatism
RT optometry
vision

anatase
UF *octahedrite*
GS chalcogenides
. oxides
. . metal oxides
. . . titanium oxides
. . . . anatase
minerals
. anatase
titanium compounds
. titanium oxides
. . anatase
RT pigments
rutile

anatomy
SN (LIMITED TO ANIMAL ANATOMY)
GS anatomy
. abdomen
. chest
. circulatory system
. . cardiovascular system
. . . blood vessels
. . . . arteries
. . . . . aorta
. . . . capillaries (anatomy)
. . . . . glomerulus
. . . . veins
. . . heart
. . . . cardiac auricles
. . . . cardiac ventricles
. . . . epicardium
. . . . myocardium
. digestive system
. . esophagus
. . gastrointestinal system
. . . appendix (anatomy)
. . . intestines
. . . . rectum
. . . stomach
. . mouth
. . . lips (anatomy)
. . pancreas
. . salivary glands
. . teeth
. . tongue
. face (anatomy)
. . chin
. . forehead
. . mouth
. . . lips (anatomy)
. . nose (anatomy)
. genitourinary system
. . bladder
. . kidneys
. . . glomerulus
. . reproductive systems
. . . sex glands
. . . . gonads
. . . . . ovaries
. . . . . testes
. . . . prostate gland
. . . uterus
. glands (anatomy)
. . endocrine glands
. . . adrenal gland
. . . gonads
. . . . ovaries
. . . . testes
. . . hypothalamus
. . . pancreas
. . . parathyroid gland
. . . pineal gland
. . . pituitary gland
. . . thymus gland
. . . thyroid gland
. . mammary glands
. . salivary glands
. . sebaceous glands
. . sex glands
. . . gonads
. . . . ovaries
. . . . testes
. . . prostate gland
. head (anatomy)
. . skull
. . . cranium
. . . . intracranial cavity
. . . mastoids
. human body
. limbs (anatomy)
. . arm (anatomy)
. . . elbow (anatomy)
. . . forearm
. . hand (anatomy)

. . . fingers
. . leg (anatomy)
. . . feet (anatomy)
. . . knee (anatomy)
. . . thigh
. liver
. lumber region
. musculoskeletal system
. . bones
. . . femur
. . . pelvis
. . . scapula
. . . skull
. . . . cranium
. . . . . intracranial cavity
. . . . mastoids
. . . spine
. . . . vertebrae
. . . sternum
. . . tibia
. . . ulna
. . connective tissue
. . . bone marrow
. . . cartilage
. . . collagens
. . joints (anatomy)
. . . elbow (anatomy)
. . . knee (anatomy)
. . . wrist
. . muscles
. . . constrictors
. . . diaphragm (anatomy)
. . . flexors
. . . myocardium
. . . tendons
. neck (anatomy)
. nervous system
. . afferent nervous systems
. . autonomic nervous system
. . . sympathetic nervous system
. . central nervous system
. . . brain
. . . . brain stem
. . . . cerebellum
. . . . cerebral ventricles
. . . . cerebrum
. . . . . cerebral cortex
. . . . . occipital lobes
. . . . diencephalon
. . . . . hypothalamus
. . . . . pineal gland
. . . . . thalamus
. . . . hippocampus
. . . spinal cord
. . efferent nervous systems
. . nerves
. . . ganglia
. . . oculomotor nerves
. . peripheral nervous system
. peritoneum
. pleurae
. respiratory system
. . bronchi
. . diaphragm (anatomy)
. . larynx
. . . glottis
. . . vocal cords
. . lungs
. . . alveoli
. . nose (anatomy)
. . paranasal sinuses
. . pharynx
. . trachea
. sciatic region
. sense organs
. . baroreceptors
. . chemoreceptors
. . ear
. . . eardrums
. . . eustachian tubes
. . . labyrinth
. . . . cochlea
. . . . . Corti organ
. . . . otolith organs
. . . . semicircular canals
. . . . vestibules
. . . middle ear
. . eye (anatomy)
. . . choroid membranes
. . . conjunctiva
. . . cornea
. . . oculomotor nerves
. . . pupils
. . . retina
. . . . fovea
. . gravireceptors
. . . otolith organs
. . mechanoreceptors
. . photoreceptors
. . proprioceptors
. . thermoreceptors
. skin (anatomy)
. . epidermis
. spleen
. thorax
. torso
RT appendages
bifurcation (biology)
biodynamics
∞ biology
cells (biology)
∞ differentiation
differentiation (biology)
dorsal sections
epithelium
exoskeletons
hepatitis
morphology
organs
posterior sections
tissues (biology)
vestibular nystagmus
viscera

anchors (fasteners)
GS fasteners
. anchors (fasteners)
RT ∞ bands
bolts
brackets
clips
couplings
guy wires
holders
mooring
nuts (fasteners)
screws
straps
studs (structural members)
tetherlines

Andes Mountains (South America)
GS landforms
. mountains
. . Andes Mountains (South America)
RT South America

andesite
DEF Volcanic rock composed essentially of andesine and one or more mafic constituents.
GS aluminum compounds
. aluminum silicates
. . andesite
rocks
. andesite
silicon compounds
. silicates
. . aluminum silicates
. . . andesite
RT feldspars
igneous rocks
minerals
soils

Andorra
GS nations
. Andorra
RT Europe
France
Pyrenees Mountains (Europe)
Spain

∞ **Andromeda**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Andromeda Constellation
Andromeda Galaxy

Andromeda Constellation
GS constellations
. Andromeda Constellation
RT ∞ Andromeda
Andromeda Galaxy

Andromeda Galaxy
GS celestial bodies
. galaxies
. . spiral galaxies
. . . Andromeda Galaxy
RT ∞ Andromeda
Andromeda Constellation
local group (astronomy)

anechoic chambers
DEF Enclosures especially designed with boundaries that absorb sufficiently well the sound incident thereon to create an essentially field-free condition in the frequency ranges of interest.
GS compartments
. test chambers
. . anechoic chambers
test facilities
. anechoic chambers
RT acoustic attenuation
acoustic measurement
acoustics
∞ chambers
zero sound

anelasticity
GS mechanical properties
. elastic properties
. . anelasticity
RT creep properties
internal friction
modulus of elasticity
stress relaxation

anemias
GS diseases
. anemias
RT blood
blood cells
hematocrit ratio
hemoglobin
ischemia
occupational diseases

anemometers
DEF Instruments used to measure the speed of air currents, usually measured from the rotation

of wind driven cups or from wind pressure through a tube pointed into the wind.
GS measuring instruments
. anemometers
. . drag force anemometers
. . hot–film anemometers
. . hot–wire anemometers
. . laser anemometers
. . sonic anemometers
RT aircraft instruments
flow measurement
meteorological instruments
speed indicators
velocity measurement
wind (meteorology)
wind measurement
wind vanes
wind velocity
wind velocity measurement

anemometry
USE velocity measurement

anesthesia
GS anesthesia
. electroanesthesia
RT analgesia
hypnosis
sensory perception
unconsciousness

anesthesiology
GS medical science
. anesthesiology
RT chloroform
clinical medicine
depressants
diagnosis
drugs
pharmacology

anesthetics
GS drugs
. anesthetics
. . chloroform
. . cyclopropane
. . methyl chloride
. . novocain
RT ethers

angels (radar)
DEF Echos of false radar targets caused by atmospheric inhomogeneity, atmospheric refraction, insects, birds, or unknown phenomena.
GS echoes
. radar echoes
. . angels (radar)
RT glint
radar cross sections
radio echoes

angina pectoris
GS diseases
. heart diseases
. . angina pectoris
RT anoxia
arteriosclerosis
coronary artery disease
emotional factors
heart function
heart rate
myocardium
physical exercise
stress (physiology)

angiography
GS imagery
. radiography
. . angiography
RT brain
cardiology
cardiovascular system

angiosperms
RT grains (food)
nuts (fruits)
plants (botany)
vegetables

angle of attack
DEF The angle between a reference line fixed with respect to an airframe and a line in the direction of movement of the body.
GS geometry
. Euclidean geometry
. . angles (geometry)
. . . angle of attack
. . . . zero angle of attack
RT aerodynamic characteristics
aerodynamic stalling
∞ attack
boundary layer separation
lift
sweep angle
wing rock

angles (geometry)
DEF The inclination to each other of two intersecting lines, measured by the arc of a circle intercepted between the two lines forming the angle, the center of the circle being the point of intersection.
GS geometry
. Euclidean geometry
. . angles (geometry)
. . . angle of attack
. . . . zero angle of attack
. . . Bragg angle
. . . Brewster angle
. . . dihedral angle
. . . elevation angle
. . . look angles (electronics)
. . . look angles (tracking)
. . . sweep angle
. . . . sweepback
. . . . . leading edge sweep
RT angular resolution
apsides
azimuth
complements (mathematics)
corners
elongation
goniometers
∞ grade
gradients
grazing incidence
incidence
obliqueness
phase shift
photogoniometers
pitch (inclination)
∞ profiles
protractors
reciprocal theorems
slopes
triangulation
trigonometry

Angola
GS nations
. Angola
RT Africa

angular acceleration
DEF The rate of change of angular velocity.
GS rates (per time)
. acceleration (physics)
. . angular acceleration
RT ∞ acceleration
acceleration measurement
centrifugal force
centripetal force
deceleration
rotation
spin reduction
transverse acceleration
yo–yo devices

angular correlation
GS correlation
. angular correlation
RT data correlation
MATTS (systems)
view effects

angular distribution
GS distribution (property)
. angular distribution
RT electron density profiles
elementary particle interactions
flux density
force distribution
mass distribution
moment distribution
nuclear scattering
star distribution

angular momentum
GS momentum
. angular momentum
RT classical mechanics
Clebsch–Gordan coefficients
electron spin
kinetics
moments of inertia
particle spin
quantum numbers
quantum theory
quenching (atomic physics)
Racah coefficient
Regge poles
spin
spin tests
stellar rotation
Wigner coefficient

angular motion
USE angular velocity

angular resolution
DEF Specifically, the ability of a radar to distinguish between two targets solely by the measurement of angles.
GS resolution
. angular resolution
RT accuracy
angles (geometry)
high resolution
∞ optics
radar resolution

angular velocity
DEF The change of angle per unit time; specifically, in celestial mechanics, the change in angle of the radius vector per unit time. Used for angular motion.
UF *angular motion*
GS rates (per time)
. angular velocity
velocity
. angular velocity
RT gyration
orbital velocity
revolving

rotation
rotor speed
Sagnac effect
tachometers
tip speed

anhydrides
GS chalcogenides
. oxides
. . **anhydrides**
. . . peroxides
. . . . inorganic peroxides
. . . . . hydrogen peroxide
. . . . organic peroxides
. . . . potassium peroxides
. . . . sodium peroxides
RT acids
bases (chemical)

Anik 1
UF *Anik A*
Telesat Canada A
GS artificial satellites
. synchronous satellites
. . Anik satellites
. . . **Anik 1**
Canadian spacecraft
. Anik satellites
. . **Anik 1**
RT Canada
Canadian space program
Delta launch vehicle
international cooperation

Anik 2
UF *Anik B*
Telesat Canada B
GS artificial satellites
. synchronous satellites
. . Anik satellites
. . . **Anik 2**
Canadian spacecraft
. Anik satellites
. . **Anik 2**
RT Canada
Canadian space program
Delta launch vehicle
international cooperation

Anik 3
UF *Anik C*
Telesat Canada 3
Telesat Canada C
GS artificial satellites
. synchronous satellites
. . Anik satellites
. . . **Anik 3**
Canadian spacecraft
. Anik satellites
. . **Anik 3**
RT Canada
Canadian space program
international cooperation

Anik A
USE **Anik 1**

Anik B
USE **Anik 2**

Anik C
USE **Anik 3**

Anik satellites
DEF A series of geostationary communication satellites operated by Telesat which is partly owned by the Canadian government and partly owned by private enterprise. The name "Anik" is derived from an Eskimo word meaning "brother." It was so designated because of its partial use in the Far North.
GS artificial satellites
. synchronous satellites
. . **Anik satellites**
. . . Anik 1
. . . Anik 2
. . . Anik 3
Canadian spacecraft
. **Anik satellites**
. . Anik 1
. . Anik 2
. . Anik 3
RT Canadian space program
Delta launch vehicle
international cooperation

aniline
GS amines
. **aniline**
RT dyes

animals
UF *fauna*
metazoa
GS **animals**
. homeotherms
. invertebrates
. . arthropods
. . . artemia
. . . crabs
. . . insects
. . . . bees
. . . . bollworms
. . . . chironomus flies
. . . . cockroaches
. . . . Coleoptera
. . . . . beetles
. . . . . tribolia
. . . . . boll weevils
. . . . crickets
. . . . Drosophila
. . . . fireflies
. . . . grasshoppers
. . . . locusts
. . . . moths
. . . . . silkworms
. . . spiders
. . molluscs
. . . cephalopods
. . . . octopuses
. . . snails
. . Rotifera
. . sea urchins
. . worms
. . . flatworms
. livestock
. poikilotherms
. protozoa
. . amoeba
. . . paramyxa
. . Flagellata
. . . Euglena
. . . trypanosome
. . paramecia
. vertebrates
. . amphibia
. . . frogs
. . birds
. . . chickens
. . . pigeons
. . . turkeys
. . . waterfowl
. . fishes
. . . schools (fish)
. . . sharks
. . mammals
. . . bats
. . . bears
. . . cats
. . . cattle
. . . . calves
. . . deer
. . . . caribous
. . . dogs
. . . goats
. . . horses
. . . marine mammals
. . . . dolphins
. . . . manatees
. . . . porpoises
. . . . seals (animals)
. . . . whales
. . . moles
. . . primates
. . . . apes
. . . . . chimpanzees
. . . . baboons
. . . . human beings
. . . . monkeys
. . . rodents
. . . . guinea pigs
. . . . hamsters
. . . . mice
. . . . . jerboas
. . . . . pocket mice
. . . . rabbits
. . . . rats
. . . . squirrels
. . . . . ground squirrels
. . . sheep
. . . swine
. . . wolves
. . reptiles
. . . lizards
. . . snakes
. . . turtles
. wildlife
. zooplankton
RT ∞ biology
biomass
carbon cycle
census
endangered species
food chain
grazing
habitats
heterotrophs
larvae
microorganisms
organisms
parasites
plankton
plants (botany)
predators
viability
wildlife radiolocation
∞ zoology

animation
GS arts
. graphic arts
. . **animation**
. . . computer animation
RT cinematography
motion pictures

anions
GS ions
. negative ions
. . **anions**
RT amino radical
anodes
cations

cell anodes
electrode materials
electron affinity
ionic mobility

anisole
GS ethers
. anisole
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . anisole

anisotropic fluids
GS media
. anisotropic media
. . anisotropic fluids
RT anisotropy
∞ fluids
invariant imbeddings
isotropy
liquid crystals
Newtonian fluids

anisotropic media
GS media
. anisotropic media
. . anisotropic fluids
RT anisotropy
birefringence
birefringent coatings
functionally gradient materials
homogeneity
isotropic media
∞ materials
polarization (waves)

anisotropic plates
UF nonisotropic plates
GS structural members
. plates (structural members)
. . anisotropic plates
RT cantilever plates
end plates
perforated plates
reinforced plates

anisotropic shells
GS shells (structural forms)
. anisotropic shells
RT corrugated shells
elastic shells
reinforced shells

anisotropy
DEF Having different properties in different directions. Used for nonisotropy, orientation, photothermotropism, and thermotropism.
UF nonisotropy
orientation
photothermotropism
thermotropism
GS anisotropy
. plastic anisotropy
. . elastic anisotropy
RT accelerogram
anisotropic fluids
anisotropic media
birefringence
crystal structure
crystals
directivity
entropy
mechanical properties
metallography
polarization (spin alignment)
polarization (waves)
spatial distribution

Anna hurricane
GS storms
. storms (meteorology)
. . cyclones
. . . hurricanes
. . . . Anna hurricane
. . tropical storms
. . . hurricanes
. . . . Anna hurricane

ANNA satellites
GS artificial satellites
. geodetic satellites
. . ANNA satellites
RT Explorer 29 satellite
Explorer 36 satellite
GEOS 1 satellite
GEOS 2 satellite
GEOS 3 satellite

annealing
DEF Application of heat energy to a material cooling at a suitable rate to relieve stresses, change certain properties, improve machinability, or for realignment of atoms in a distorted lattice as caused, for example, by radiation damage.
GS heat treatment
. annealing
. . laser annealing
. . pulse heating
RT combustion synthesis
graphitization
hardening (materials)
heating
normalizing (heat treatment)
recrystallization
simulated annealing
softening
stress relieving
tempering

annihilation reactions
GS annihilation reactions
. positron annihilation
RT antiparticles
electron-positron pairs
high energy interactions
matter-antimatter propulsion
photons
proton-proton reactions

annotations
RT abstracts
information
summaries

annual variations
UF seasonal variations
GS variations
. periodic variations
. . annual variations
RT atmospheric circulation
brown wave effect
cycles
green wave effect
magnetic variations
meteorological parameters
meteorology
monsoons
seasons
temporal distribution
weather
wind variations
zonal flow (meteorology)

annular core pulse reactors
GS nuclear reactors
. annular core pulse reactors
RT ∞ nuclear energy
nuclear fuel elements
nuclear fuels
reactor cores
reactor design
reactor materials
reactor physics
reactor safety
reactor technology
∞ reactors

annular ducts
DEF Ring-shaped openings for the passage of fluids (gases, etc.) designed for optimum aerodynamic flow properties for the application involved.
GS ducts
. annular ducts
RT air ducts
duct geometry
ducted bodies
fluid flow
intake systems
nose inlets
openings
orifices
vents

annular flow
GS fluid flow
. axisymmetric flow
. . annular flow
RT annuli
axial flow
channel flow
coaxial flow
Couette flow
∞ flow
flow geometry
heat transmission
nozzle flow
one dimensional flow
turbulent flow

annular nozzles
RT annuli
coaxial flow
conical nozzles
exhaust nozzles
inlet nozzles
∞ nozzles
plug nozzles
rocket nozzles
shrouded nozzles
spray nozzles

annular plates
GS structural members
. plates (structural members)
. . annular plates
RT annuli
circular plates
flat plates

annular suspension and pointing system
DEF In the Shuttle era, high accuracy pointing and stabilization of an experiment payload.
GS pointing control systems
. annular suspension and pointing system
RT magnetic suspension
payloads
space shuttles
space transportation system
Spacelab

Spacelab payloads
∞ systems

annuli
RT analytic geometry
annular flow
annular nozzles
annular plates
flow measurement
∞ rings

anodes
DEF The positive poles or electrodes of electron emitters, such as electron tubes or electric cells.
GS electrodes
. anodes
. . cell anodes
. . shell anodes
. . tube anodes
RT accumulators
anions
cathodes
electrode materials
multi-anode microchannel arrays

anodic coatings
GS coatings
. inorganic coatings
. . anodic coatings
. protective coatings
. . anodic coatings
RT anodizing
cathodic coatings
electrode materials
oxides

anodic stripping
DEF The removal of metal coatings.
RT cladding
coating
debonding (materials)
determining
metal coatings
plating
removal
∞ stripping

anodizing
DEF An electrolytic oxidation process in which the surface of a metal, when anodic, is converted to a coating having desirable protective, decorative, or functional properties.
GS coating
. anodizing
deposition
. anodizing
RT anodic coatings
passivity
protective coatings
surface treatment

anolytes
GS conductors
. electrolytes
. . anolytes
RT catholytes
cell anodes

anomalies
DEF In general, deviations from the norm.
GS anomalies
. geothermal anomalies
. gravity anomalies
. magnetic anomalies
. . geomagnetic hollow
RT anomalous temperature zones
Southern oscillation

anomalous temperature zones
RT anomalies
geysers
stratospheric warming
temperature measurement
temperature measuring instruments
temperature scales
temperature sensors

anorthosite
DEF A group of essentially monomineralic plutonic igneous rocks composed almost entirely of plagioclase feldspar.
GS rocks
. igneous rocks
. . anorthosite
RT feldspars
gabbro
soils

anoxia
DEF A complete lack of oxygen available for physiological use within the body.
RT angina pectoris
asphyxia
hypoxia
stress (physiology)

ANS
USE Astronomical Netherlands Satellite

Antarctic environment
USE Ice environments

Antarctic Ocean
GS oceans
. Antarctic Ocean
RT Antarctic regions

Antarctic regions
DEF The areas surrounding and including the continent of Antarctica. Used for Antarctica.
UF Antarctica
GS regions
. polar regions
. . Antarctic regions
. . . McMurdo sound
. . . Ross ice shelf
. remote regions
. . Antarctic regions
. . . McMurdo sound
. . . Ross ice shelf
Southern Hemisphere
. Antarctic regions
. . McMurdo sound
. . Ross ice shelf
RT Antarctic Ocean
climatology
continents
land ice
ozone depletion
polar caps
Total Ozone Mapping Spectrometer

Antarctica
USE Antarctic regions

Antares rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . Antares rocket vehicle
. sounding rockets
. . Antares rocket vehicle
RT atmospheric ionization
solid propellant rocket engines
X-254 engine

Antelope missile
GS missiles
. Antelope missile

antenna arrays
DEF Systems of antennas coupled together to obtain directional effects, or to increase sensitivity.
GS arrays
. antenna arrays
. . linear arrays
. . . endfire arrays
. . . . Yagi antennas
. . . multispectral linear arrays
. . steerable antennas
. . . inertialess steerable antennas
. . turnstile antennas
RT antennas
beamforming
Cobra Dane (radar)
dipole antennas
directional antennas
log periodic antennas
microwave antennas
patch antennas
phased arrays
retroreflection
space based radar
Very Large Array (VLA)
Very Long Baseline Array (VLBA)

antenna components
GS antenna components
. antenna couplers
. . diplexers
. . directional couplers
. antenna feeds
. parasitic elements (antennas)
. . directors (antenna elements)
RT communication equipment
∞ components
couplers
electronic equipment
∞ spinners

antenna couplers
GS antenna components
. antenna couplers
. . diplexers
. . directional couplers
couplers
. antenna couplers
. . diplexers
. . directional couplers
RT antennas
couples
coupling
coupling circuits
energy transfer
impedance matching
microwave coupling
transmission lines

antenna design
RT antennas
backlobes
Cassegrain antennas
delta antennas
∞ design
dipole antennas
gravitational wave antennas
Gregorian antennas
helical antennas
horn antennas
lens antennas
∞ lobes
log periodic antennas
maypole antennas
microstrip antennas

monopole antennas
parabolic antennas
parasitic elements (antennas)
patch antennas
pencil beams
plasma antennas
product development
rhombic antennas
sidelobes
slot antennas
space technology experiments
spiral antennas
Yagi antennas

antenna feeds
GS antenna components
. antenna feeds
RT Gregorian antennas
reflector antennas
strip transmission lines
transmission lines
waveguides

antenna fields
USE antenna radiation patterns

antenna radiation patterns
UF antenna fields
GS distribution (property)
. radiation distribution
. . antenna radiation patterns
. . . sidelobes
RT antennas
backfire antennas
backlobes
beam steering
beamsteering
cylindrical antennas
directional antennas
∞ fans
far fields
field theory (physics)
footprints
Fresnel region
Gregorian antennas
∞ lobes
near fields
parasitic elements (antennas)
pencil beams
plasma antennas
∞ radiation
reflector antennas
rosette shapes
Schelkunoff principle
Sommerfeld approximation
support interference
synthetic arrays

antennas
DEF Conductors or systems of conductors for radiating or receiving radio waves.
GS antennas
. aircraft antennas
. backfire antennas
. Cassegrain antennas
. cylindrical antennas
. delta antennas
. directional antennas
. . dipole antennas
. . helical antennas
. . horn antennas
. . lens antennas
. . log periodic antennas
. . loop antennas
. . radar antennas
. . . radant
. . reflector antennas
. . . parabolic antennas
. . . two reflector antennas
. . rhombic antennas
. . slot antennas
. . steerable antennas
. . . inertialess steerable antennas
. . Yagi antennas
. furlable antennas
. gravitational wave antennas
. Gregorian antennas
. high resolution coverage antennas
. hoop column antennas
. maypole antennas
. microstrip antennas
. missile antennas
. monopulse antennas
. multibeam antennas
. multiple beam interval scanners
. omnidirectional antennas
. . monopole antennas
. . . whip antennas
. . turnstile antennas
. parasitic elements (antennas)
. . directors (antenna elements)
. plasma antennas
. radio antennas
. . microwave antennas
. . . horn antennas
. . . lens antennas
. . . rectennas
. . . spaceborne
. satellite antennas
. Schwarzschild antennas
. spacecraft antennas
. spherical antennas
. spiral antennas
. . log spiral antennas
. waveguide antennas
. . horn antennas
. patch antennas
RT antenna arrays
antenna couplers
antenna design
antenna radiation patterns
arrays
conductors
covers
current sheets
electromagnetic radiation
folding structures
inflatable space structures
near fields
radiation hardening
∞ radiators
radio equipment
radio telescopes
reflectors
slewing
space technology experiments
telecommunication
telescopes
towers
transmitters

Anthour aircraft
USE A6I-82 aircraft

anthracene
GS organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . anthracene
. hydrocarbons
. . cyclic hydrocarbons
. . . anthracene
RT anthraquinones
phenanthrene

anthracite
DEF Coal of the highest metamorphic rank, in which fixed-carbon content is between 92 percent and 98 percent (on a dry, mineral-matter–free basis). It is hard and black, and has a semimetallic luster and semiconchoidal fracture. Anthracite ignites with difficulty and burns with a short blue flame, without smoke. Used for hard coal.
UF *hard coal*
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . fossil fuels
. . . . coal
. . . . . anthracite
resources
. Earth resources
. . fossil fuels
. . . coal
. . . . anthracite
rocks
. sedimentary rocks
. . carbonaceous rocks
. . . coal
. . . . anthracite
RT mineral exploration
mining

anthraquinones
GS ketones
. anthraquinones
RT anthracene
dyes

anthropology
DEF The study of the interrelations of biological, cultural, geographical, and historical aspects of man.
RT aborigines
American Indians
anthropometry
archaeology
artifacts
case histories
cities
culture (social sciences)
Eskimos
human beings
minorities
museums
race factors
races (anthropology)
∞ science
social factors
sociology

anthropometry
GS bioengineering
. biometrics
. . body measurement (biology)
. . . anthropometry
RT anthropology
body size (biology)
∞ engineering
human factors engineering

antiadrenergics
GS drugs
. antiadrenergics
RT adrenergics

antiaircraft missiles
GS missiles
. antiaircraft missiles
. . BOMARC missiles
. . . BOMARC A missile
. . . BOMARC B missile
. . Falcon missile

. . Mauler missile
. . Nike–Ajax missile
. . Nike–Hercules missile
. . Redeye missile
. . SIAM missiles
. . Sidewinder missiles
. . tartar missile
. . terrier missile
RT air to air missiles
antimissile missiles
Nike missiles
ramjet missiles
surface to air missiles

antibiotics
GS drugs
. **antibiotics**
. . actinomycin
. . penicillin
. . pleurotin
. . streptomycin
. . tetracyclines
RT antiinfectives and antibacterials
microorganisms
steroids

antibodies
GS **antibodies**
. gamma globulin
RT acquired immunodeficiency syndrome
antiserums
biocompatibility
human immunodeficiency virus
immune systems
immunology
inoculum
physiological defenses
vaccines

anticholinergics
UF *cholinergic blocking agents*
GS drugs
. cholinergics
. . **anticholinergics**
RT curare

anticlines
DEF Geologic formations characterized by folds, the core of which contain stratigraphically older rocks; they convex upward. Used for anticlinoria.
UF *anticlinoria*
RT domes (geology)
geosynclines
∞ layers
strata
stratification
stratigraphy
synclines

anticlinoria
USE **anticlines**

anticoagulants
RT adrenergics
∞ agents
heparins
preservatives
stabilizers (agents)

anticonvulsants
GS drugs
. **anticonvulsants**
RT hexamethonium

anticyclones
RT air masses
atmospheric pressure
cyclones
high pressure
meteorology
synoptic meteorology

antidiuretics
GS drugs
. **antidiuretics**
RT urine

antidotes
GS drugs
. **antidotes**
RT inhibitors

antiemetics and antinauseants
GS drugs
. **antiemetics and antinauseants**
RT nausea

antiferroelectricity
GS electrical properties
. **antiferroelectricity**
RT dielectric properties
ferroelectricity
hysteresis
∞ polarization

antiferromagnetism
GS magnetic properties
. **antiferromagnetism**
RT ferromagnetism
hysteresis
Ising model
magnetic switching
magnons
neel temperature
paramagnetism

antifouling
DEF Measures taken to prevent corrosion or the accumulation of organic or other residues or growths on operating machanisms, especially in underwater environments.
GS fouling
. **antifouling**
RT ∞ agents
cleaning
contamination
corrosion prevention
inhibitors
sterilization

antifreezes
GS additives
. **antifreezes**
RT antiicing additives
freezing

antifriction bearings
GS bearings
. **antifriction bearings**
. . ball bearings
. . roller bearings
. . . needle bearings
RT friction reduction
gas bearings
journal bearings
needle bearings
rolling contact loads
thrust bearings

antigens
RT anaphylaxis
biocompatibility
immune systems
immunoassay
immunology
inoculum
physiological defenses
radioimmunoassay
Rhesus factor
vaccines

antigravity
DEF A hypothetical effect that would arise from cancellation by some energy field of the effect of the gravitational field of the earth or other body.
RT gravitation
microgravity

Antigua and Barbuda
(added February 1989)
GS landforms
. islands
. . West Indies
. . . **Antigua and Barbuda**
nations
. **Antigua and Barbuda**
RT Caribbean region

antihistaminics
GS drugs
. **antihistaminics**
. . dimenhydrinate
. . diphenyl hydantoin
. . promethazine
RT decongestants
histamines

antihypertensive agents
GS drugs
. **antihypertensive agents**
RT reserpine

antiicing additives
GS additives
. **antiicing additives**
RT antifreezes
deicers
deicing
fuel contamination
ice prevention
inhibitors
propellant additives
retardants

antiinfectives and antibacterials
GS drugs
. **antiinfectives and antibacterials**
RT antibiotics
antiseptics
bactericides
contamination
fungicides

antiknock additives
GS additives
. **antiknock additives**
RT automobile fuels
gasoline
∞ octane
octanes
retardants

antimatter
GS **antimatter**
. antiparticles
. . antineutrinos
. . antinucleons
. . antiprotons
. . positrons
RT degenerate matter
matter (physics)
matter–antimatter propulsion

negative matter

antimissile defense
SN (PROTECTION AGAINST MISSILE ATTACK)
GS air defense
. **antimissile defense**
RT antiradiation missiles
civil defense
∞ defense
defense industry
defense program
military technology
missile defense
missiles
optical countermeasures
Safeguard system
Sentinel system
space surveillance (ground based)
space surveillance (spacebome)

antimissile missiles
GS missiles
. **antimissile missiles**
. . Mauler missile
. . Nike–Zeus missile
. . Spartan missile
. . Sprint missile
RT antiaircraft missiles
ballistic missiles
infrared tracking
missile defense
Nike missiles
Nike X systems
Sentinel system
SIAM missiles
space weapons
surface to air missiles

antimisting fuels
DEF Fuels which have an additive to reduce misting and thus create safer fuels.
GS fuels
. chemical fuels
. . liquid fuels
. . . **antimisting fuels**
RT additives
aircraft fuels
flame retardants
jet engine fuels
kerosene

antimonides
GS antimony compounds
. **antimonides**
. . aluminum antimonides
. . cadmium antimonides
. . cesium antimonides
. . gallium antimonides
. . germanium antimonides
. . indium antimonides
. . zinc antimonides

antimony
GS chemical elements
. metalloids
. . **antimony**
RT metals

antimony alloys
GS alloys
. **antimony alloys**
. . babbitt metal
RT bismuth alloys
mulberry (alloy)

antimony compounds
GS **antimony compounds**
. antimonides
. . aluminum antimonides
. . cadmium antimonides
. . cesium antimonides
. . gallium antimonides
. . germanium antimonides
. . indium antimonides
. . zinc antimonides
. **antimony fluorides**
RT ∞ chemical compounds
Group 5A compounds
∞ metal compounds

antimony fluorides
GS antimony compounds
. **antimony fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . **antimony fluorides**
. halides
. . fluorides
. . . **antimony fluorides**

antimony isotopes
GS chemical elements
. metalloids
. . **antimony isotopes**
. nuclides
. . isotopes
. . . **antimony isotopes**
metals
. **antimony isotopes**

antineutrinos
GS antimatter
. antiparticles
. . **antineutrinos**
particles
. elementary particles
. . antiparticles
. . . **antineutrinos**
. . fermions
. . . leptons
. . . . **antineutrinos**
. nuclear particles
. . antiparticles
. . . **antineutrinos**
RT charged particles
neutrinos

antinodes
DEF Either of the two points on an orbit where a line in the orbit plane, perpendicular to the line of nodes and passing through the focus intersects the orbit. Also a point, line, or surface in a standing wave where some characteristic of the wave field has maximum amplitude.
RT nodes (standing waves)
rarefaction
resonant frequencies
standing waves
vibration
wavelengths

antinucleons
GS antimatter
. antiparticles
. . **antinucleons**
particles
. elementary particles
. . antiparticles
. . . **antinucleons**
. nuclear particles
. . antiparticles
. . . **antinucleons**
RT nucleons

antioxidants
DEF Compounding ingredients used to retard deterioration caused by oxidation.
GS additives
. **antioxidants**
RT ∞ agents
corrosion prevention
corrosion resistance
inhibitors
preservatives
propellant additives
retardants
stabilizers (agents)

antiparticles
DEF Particles with a charge of opposite signs to the same particles in normal matter.
GS antimatter
. **antiparticles**
. . antineutrinos
. . antinucleons
. . antiprotons
. . positrons
particles
. elementary particles
. . **antiparticles**
. . . antineutrinos
. . . antinucleons
. . . antiprotons
. . . positrons
. nuclear particles
. . **antiparticles**
. . . antineutrinos
. . . antinucleons
. . . antiprotons
. . . positrons
RT annihilation reactions
charged particles
hyperons
Pomeranchuk theorem
positron annihilation

antipodes
DEF Anything exactly opposite to something else. Particularly, that point on the Earth 180 deg. from a given place.
RT apsides
ionospheric propagation
propagation modes
radio transmission
zenith

antiprotons
GS antimatter
. antiparticles
. . **antiprotons**
particles
. charged particles
. . **antiprotons**
. elementary particles
. . antiparticles
. . . **antiprotons**
. nuclear particles
. . antiparticles
. . . **antiprotons**
RT protons

antiquities
DEF Man–made objects or surviving parts or fragments from the past.
RT artifacts
tools
weapons

antiradar coatings
GS absorbers (materials)
. radar absorbers
. . **antiradar coatings**

coatings
. **antiradar coatings**
countermeasures
. electronic countermeasures
. . **antiradar coatings**
RT **electronic warfare**
inorganic coatings
metal coatings
plastic coatings
∞ ram

antiradiation drugs
UF *radioprotective agents*
GS drugs
. **antiradiation drugs**
. . cysteamine
RT nuclear medicine
pharmacology
radiation protection
radiation sickness
radiobiology
radiopathology

antiradiation missiles
DEF Missiles that attack radiating targets such as radar transmitters, etc.
GS **missiles**
. **antiradiation missiles**
RT air defense
antimissile defense
countermeasures
digital radar systems
military technology
missile defense
remote control

antireflection coatings
DEF Thin dielectric or metallic films applied to an optical surface to reduce the reflectance and thereby increase the transmittance. Note: The ideal value of the reactive index of a single layered film is the square root of the product of the refractive indices on either side of the film, the ideal optical thickness being one quarter of a wavelength.
GS coatings
. **antireflection coatings**
RT lens design
optical reflection
optical thickness
solar cells

antiseptics
UF *disinfectants*
RT acriflavine
antiinfectives and antibacterials
bactericides
chemical sterilization
chemotherapy
cleaning
decontamination
environmental control
fumigation
infectious diseases
purification
sterilization

antiserums
RT **antibodies**
immunology
serums
vaccines

antiship missiles
GS **missiles**
. **antiship missiles**
RT cruise missiles
sea launching
ships
submarines
weapon systems

antiship warfare
GS warfare
. **antiship warfare**
RT missiles
sea launching
ships
submarines
warheads
weapons

antisite defects
(added July 1997)
DEF Point defects occurring in crystalline compounds where an atom of one atomic species occupies an atomic site that is allocated to a different atomic species (e.g., in GaAs, an arsenic atom may sit on a site allocated to a gallium atom). If the nearest neighbor sites are occupied with the correct species for their sites (e.g., an arsenic antisite atom surrounded by arsenic atoms), the antisite atom is then bonded to four like atoms (rather than four Ga atoms). Such a configuration is not electrically neutral, but acts as a double donor. An "antisite pair" occurs if two adjacent atoms have simply been interchanged.
GS defects
. crystal defects
. . point defects
. . . **antisite defects**
RT donor materials
gallium arsenides
interstitials
semiconductors (materials)
vacancies (crystal defects)

antiskid devices
RT aircraft brakes
arresting gear
automobiles
brakes (for arresting motion)
∞ devices
landing aids
safety devices
trucks
wheel brakes

antistatic devices
USE **static dischargers**

antisubmarine warfare
GS warfare
. **antisubmarine warfare**
RT ASROC engine
military technology
sonobuoys
submarines
torpedoes
underwater explosions
underwater trajectories

antisubmarine warfare aircraft
GS **antisubmarine warfare aircraft**
. Breguet 1150 aircraft
. CL-84 aircraft
. P-3 aircraft
. S-2 aircraft
. S-3 aircraft
. SH-3 helicopter
. SH-4 helicopter
RT ∞ aircraft
attack aircraft
bomber aircraft
drone aircraft
H-25 helicopter
∞ military aircraft
observation aircraft
P-531 helicopter
reconnaissance aircraft
S-61 helicopter
submersible aircraft
V/STOL aircraft
water takeoff and landing aircraft

antisymmetry
RT asymmetry
chirality
symmetry

antitank missiles
GS missiles
. surface to surface missiles
. . **antitank missiles**
. . . Shillelagh missiles
. . . tow missiles

Antonov aircraft
GS **Antonov aircraft**
. AN-2 aircraft
. AN-22 aircraft
. AN-24 aircraft
RT ∞ aircraft

Antonov AN-22 aircraft
USE **AN-22 aircraft**

Antonov AN-24 aircraft
USE **AN-24 aircraft**

anvil clouds
GS clouds (meteorology)
. convection clouds
. . cumulonimbus clouds
. . . **anvil clouds**
. . cumulus clouds
. . . **anvil clouds**
RT atmospheric moisture
climatology
cloud cover
fog
meteorology
nephanalysis
precipitation (meteorology)
thunderstorms
weather

anvils
RT compressing
tools

anxiety
DEF Nervous or fear reaction to a perception of danger.
RT detachment
fear
fear of flying
phobias
stress (biology)
Taylor manifest anxiety scale

AO-1 aircraft
USE **OV-1 aircraft**

AOIPS
USE **Atmospheric & Oceanographic Inform Sys**

aorta
GS anatomy
. circulatory system
. . cardiovascular system
. . . blood vessels
. . . . arteries

. . . . . **aorta**
RT heart

AOSO
UF *Advanced Orbiting Solar Observatory*
GS artificial satellites
. geophysical satellites
. . OSO
. . . **AOSO**
. scientific satellites
. . astronomical satellites
. . . OSO
. . . . **AOSO**
observatories
. astronomical observatories
. . astronomical satellites
. . . OSO
. . . . **AOSO**
. . solar observatories
. . . OSO
. . . . **AOSO**
. geophysical observatories
. . OSO
. . . **AOSO**
RT sun

Apache rocket vehicle
GS rocket vehicles
. sounding rockets
. . **Apache rocket vehicle**
RT sondes

apatites
USE **calcium phosphates**
minerals

aperiodic functions
GS analysis (mathematics)
. **aperiodic functions**
functions (mathematics)
. **aperiodic functions**
RT complex variables
real variables

apertures
GS openings
. **apertures**
. . irises (mechanical apertures)
. . numerical aperture
. . synthetic apertures
RT boundary element method
cavities
doors
gates (openings)
infrared windows
louvers
orifices
outlets
pinhole cameras
ports (openings)
slits
synthetic arrays
vents
VSAT (network)
windows (apertures)

apes
GS animals
. vertebrates
. . mammals
. . . primates
. . . . **apes**
. . . . . chimpanzees

apexes
UF *vertices*
RT altitude
aphelions
apogees
maxima
orbits
∞ peaks
plateaus
trajectories
zenith

aphelions
GS apsides
. **aphelions**
RT apexes
elliptical orbits
orbits
perihelions
solar orbits

APL (programming language)
DEF "A Programming Language" is a high level interactive computer language primarily designed for mathematical applications. It was developed by Kenneth Iverson in 1962. It is characterized by extensive operators and array handling capability. NASA Goddard was one of the first users and was instrumental in introducing APL to the computer community.
GS languages
. programming languages
. . **APL (programming language)**
RT computer programming

apnea
USE **respiration**

apogee boost motors
UF *ABM*
apogee kick motors
GS engines
. rocket engines
. . booster rocket engines
. . . **apogee boost motors**
. . solid propellant rocket engines
. . . **apogee boost motors**
RT ∞ boosters
motors

apogee kick motors
USE **apogee boost motors**

apogees
DEF Those orbital points farthest from the Earth, when the Earth is the center of attraction.
GS apsides
. **apogees**
RT apexes
Earth orbits
elliptical orbits
orbits
perigees

Apollo applications program
GS programs
. NASA programs
. . NASA space programs
. . . **Apollo applications program**
. space programs
. . NASA space programs
. . . **Apollo applications program**
RT AAP 1 mission
AAP 2 mission
AAP 3 mission
AAP 4 mission
airlock modules
Earth Resources Program
Earth Resources Survey Program
Saturn 1 workshop
Saturn 5 workshop
Saturn project
Saturn workshops
Skylab program

Apollo asteroids
DEF Earth grazing asteroids in orbits between Mars and Jupiter, and crossing the Earth's orbit. This group contains 19 known asteroids.
GS celestial bodies
. asteroids
. . **Apollo asteroids**
RT asteroid belts
astronomy
Chiron
Earth orbits
Jupiter (planet)
Mars (planet)
planetary orbits
solar system

Apollo extension system
RT exobiology
extravehicular activity
lunar landing modules
manned space flight
NASA programs
orbital workshops
∞ systems

Apollo flights
GS space flight
. manned space flight
. . **Apollo flights**
. . . Apollo 5 flight
. . . Apollo 6 flight
. . . Apollo 7 flight
. . . Apollo 8 flight
. . . Apollo 9 flight
. . . Apollo 10 flight
. . . Apollo 11 flight
. . . Apollo 12 flight
. . . Apollo 13 flight
. . . Apollo 14 flight
. . . Apollo 15 flight
. . . Apollo 16 flight
. . . Apollo 17 flight
RT Skylab program

Apollo lunar experiment module
GS lunar spacecraft
. Apollo spacecraft
. . **Apollo lunar experiment module**
. lunar landing modules
. . Lunar Module
. . . **Apollo lunar experiment module**
maneuverable spacecraft
. Apollo spacecraft
. . **Apollo lunar experiment module**
manned spacecraft
. Apollo spacecraft
. . **Apollo lunar experiment module**
. Lunar Module
. . **Apollo lunar experiment module**
modules
. spacecraft modules
. . landing modules
. . . lunar landing modules
. . . . Lunar Module
. . . . . **Apollo lunar experiment module**
reentry vehicles
. recoverable spacecraft
. . Apollo spacecraft
. . . **Apollo lunar experiment module**
soft landing spacecraft
. Apollo spacecraft
. . **Apollo lunar experiment module**
. landing modules

. . lunar landing modules
. . . Lunar Module
. . . . **Apollo lunar experiment module**
spacecraft components
. spacecraft modules
. . landing modules
. . . lunar landing modules
. . . . Lunar Module
. . . . . **Apollo lunar experiment module**
RT lunar exploration
lunar landing

Apollo Lunar Surface Experiments Package
UF *ALSEP*
GS packages
. instrument packages
. . **Apollo Lunar Surface Experiments Package**
RT ∞ instruments
lunar exploration
lunar retroreflectors
payloads
∞ surfaces

Apollo project
GS programs
. lunar programs
. . **Apollo project**
. NASA programs
. . NASA space programs
. . . **Apollo project**
. projects
. . **Apollo project**
. space programs
. . NASA space programs
. . . **Apollo project**
RT AAP 1 mission
AAP 2 mission
AAP 3 mission
AAP 4 mission
Advanced Range Instrumentation Aircraft
command service modules
LSSM
lunar exploration
Lunar Exploration System for Apollo
lunar mobile laboratories
lunar probes
manned spacecraft
Marquardt R4D engine
Mercury project
Saturn 1 workshop
Saturn 5 workshop
Saturn launch vehicles
Saturn workshops
SIM
site data processors
Skylab program
soft landing spacecraft

Apollo short stack
RT spacecraft configurations

Apollo Soyuz test project
UF *ASTP*
GS programs
. projects
. . **Apollo Soyuz test project**
RT international cooperation
international relations
manned spacecraft
rendezvous
Soyuz spacecraft
space flight
space missions
space programs
space rendezvous
spacecrew transfer
U.S.S.R. space program

Apollo spacecraft
GS lunar spacecraft
. **Apollo spacecraft**
. . Apollo lunar experiment module
maneuverable spacecraft
. **Apollo spacecraft**
. . Apollo lunar experiment module
manned spacecraft
. **Apollo spacecraft**
. . Apollo lunar experiment module
reentry vehicles
. recoverable spacecraft
. . **Apollo spacecraft**
. . . Apollo lunar experiment module
soft landing spacecraft
. **Apollo spacecraft**
. . Apollo lunar experiment module
RT command modules
landing modules
Lunar Module
Lunar Module 5
Lunar Module 7
manned orbital laboratories
Saturn project
service modules
Skylab program
unified S band

Apollo telescope mount
GS telescopes
. manned orbital telescopes
. . **Apollo telescope mount**
RT Skylab program

Apollo 5 flight
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 5 flight**
RT Earth–Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
lunar spacecraft
moon–Earth trajectories

Apollo 6 flight
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 6 flight**
RT Earth–Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
lunar spacecraft
moon–Earth trajectories

Apollo 7 flight
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 7 flight**
RT Earth–Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon–Earth trajectories

Apollo 8 flight
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 8 flight**
RT Earth–Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon–Earth trajectories

Apollo 9 flight
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 9 flight**
RT Earth–Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module

Apollo 10 flight
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 10 flight**
RT Earth–Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon–Earth trajectories

Apollo 11 flight
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 11 flight**
RT Earth–Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon–Earth trajectories

Apollo 12 flight
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 12 flight**
RT Earth–Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module

manned spacecraft
moon–Earth trajectories

Apollo 13 flight
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 13 flight**
RT Earth–Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon–Earth trajectories

Apollo 14 flight
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 14 flight**
RT Earth–Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon–Earth trajectories

Apollo 15 flight
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 15 flight**
RT Earth–Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon–Earth trajectories
SIM

Apollo 16 flight
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 16 flight**
RT Earth–Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon–Earth trajectories

Apollo 17 flight
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 17 flight**
RT Earth–Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon–Earth trajectories

Appalachian Mountains (North America)
GS landforms
. mountains
. . **Appalachian Mountains (North America)**
RT North America

apparatus
USE **equipment**

appearance
RT imagery
quality
visibility

appendages
GS **appendages**
. arm (anatomy)
. . elbow (anatomy)
. . forearm
. hand (anatomy)
. . fingers
. leg (anatomy)
. . feet (anatomy)
. . knee (anatomy)
. . thigh
RT anatomy
human body
limbs (anatomy)

appendix (anatomy)
GS anatomy
. digestive system
. . gastrointestinal system
. . . **appendix (anatomy)**
RT intestines

application
USE **utilization**

application specific integrated circuits
(added May 1989)
UF *ASIC*
custom integrated circuits
GS circuits
. integrated circuits
. . **application specific integrated circuits**
RT chips (electronics)
large scale integration
very large scale integration

Applications Explorer Satellites
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **Applications Explorer Satellites**
RT Heat Capacity Mapping Mission

∞ **applications of mathematics**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *mathematical analysis*
RT analysis (mathematics)
approximation
combinatorial analysis
computation
dimensional analysis
dynamic programming
econometrics
error analysis
finite element method
fractals
functions (mathematics)
information theory
Kalman-Schmidt filtering
linear programming
mathematical models
nonlinear programming
numerical analysis
operational calculus
operations research
optimization
parameterization
probability theory
statistical analysis
stochastic processes
time series analysis

applications programs (computers)
DEF Software designed to fulfill specific needs of a user, for example, software for navigation, payroll, or process control.
GS computer programs
. **applications programs (computers)**
. . NASTRAN
RT computers
software development tools

Applications Technology Satellites
USE **ATS**

approach
GS **approach**
. airborne radar approach
. instrument approach
RT air traffic control
aircraft approach spacing
arrivals
descent
flight paths
flight plans
ground based control
guidance (motion)
landing
landing aids
passageways
touchdown

approach and landing tests (STS)
DEF A series of flight maneuvers involving the Space Shuttle.
RT evaluation
horizontal spacecraft landing
landing
manned spacecraft
space shuttles
space transportation system
spacecraft landing
∞ tests
touchdown

approach control
DEF The control process which delivers aircraft to the final approach course or landing system properly spaced for their landing.
GS **approach control**
. radar approach control
RT air traffic control
aircraft approach spacing
aircraft communication
aircraft guidance
aircraft maneuvers
automated en route ATC
collision avoidance
∞ control
flight paths
glide paths
ground based control
instrument approach
instrument flight rules
instrument landing systems
landing aids
landing radar
microwave landing systems
night flights (aircraft)

runway lights
tracking (position)
traffic control
visual control

approach indicators
GS aircraft instruments
. approach indicators
display devices
. approach indicators
flight instruments
. approach indicators
landing aids
. landing instruments
. . approach indicators
measuring instruments
. indicating instruments
. . approach indicators
RT air traffic control
altimeters
blind landing
glide paths
instrument approach
instrument landing systems
microwave scanning beam landing system
navigation aids
radar approach control
solar compasses
speed indicators

appropriations
RT budgeting
cost estimates
federal budgets
grants

approximation
UF *approximation methods*
nominal values
truncation (mathematics)
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . Born approximation
. . . Born–Oppenheimer approximation
. . . Chebyshev approximation
. . . Eddington approximation
. . . essentially non-oscillatory schemes
. . . finite difference theory
. . . finite element method
. . . Hartree approximation
. . . least squares method
. . . mean square values
. . . Milne method
. . . multigrid methods
. . . Newton methods
. . . . Newton–Raphson method
. . . discretization (mathematics)
. . . numerical differentiation
. . . Oseen approximation
. . . Pade approximation
. . . particle in cell technique
. . . Pohlhausen method
. . . predictor–corrector methods
. . . Rayleigh–Ritz method
. . . relaxation method (mathematics)
. . . Reynolds averaging
. . . Ritz averaging method
. . . Schwartz method
. . . Sommerfeld approximation
. . . TVD schemes
. . . upwind schemes (mathematics)
. . . vortex in cell technique
RT ∞ applications of mathematics
censored data (mathematics)
difference equations
∞ equations
form factors
Glauber theory
∞ methodology
minimax technique
numerical stability
problem solving
∞ relationships
spline functions
static models
statistical analysis

approximation methods
USE **approximation**

apsidal angles
USE **apsides**

apsides
UF *apsidal angles*
GS **apsides**
. aphelions
. apogees
. perigees
. perihelions
. perilunes
RT angles (geometry)
antipodes
elliptical orbits
orbital elements
orbital mechanics

APT (picture transmission)
USE **automatic picture transmission**

aptitude
RT learning
personnel selection

Aquarid meteoroids
GS celestial bodies
. meteoroid showers
. . Aquarid meteoroids
. meteoroids
. . Aquarid meteoroids
RT Orionid meteoroids

aquatic plants
DEF Plants growing in or on water.
GS plants (botany)
. aquatic plants
. . phytoplankton
RT aquiculture
hydroponics
marine biology

aqueous solutions
GS mixtures
. solutions
. . aqueous solutions
RT hydrates
solvation

aquiculture
DEF The cultivation (breeding, raising, and harvesting) of fish, mollusks, shellfish, and/or other aquatic life as sources of food.
GS agriculture
. aquiculture
RT aquatic plants
fisheries
fishes
hydroponics
marine biology
marine environments
marine resources
marine technology
∞ nutrients
tidal flats

aquifers
DEF Bodies of rock that contain sufficient saturated permeable material to conduct ground water and to yield economically significant quantities of ground water to wells and springs.
GS resources
. Earth resources
. . water resources
. . . aquifers
RT fresh water
gravels
ground water
hydrogeology
hydrology
hydrothermal systems
lakes
limnology
oases
permeability
ponds
porosity
rain
sands
springs (water)
streams
water
water tables
wells

Arabian commercial satellite
USE **Arcomsat**

Arabian Sea
GS seas
. Arabian Sea
RT Indian Ocean

Arabsat
GS artificial satellites
. Arabsat
RT international cooperation
Saudi Arabian space program

aragonite
DEF A white, yellowish, or gray orthorhombic mineral, that contains calcium carbonate.
GS calcium compounds
. calcium carbonates
. . aragonite
carbon compounds
. carbonates
. . calcium carbonates
. . . aragonite
minerals
. aragonite
silicon compounds
. silicates
. . aragonite
RT calcite

aramid fiber composites
(added May 1992)
SN (ARAMID FIBER UTILIZATION IN COMPOSITES. FOR PROPERTIES OF ARAMID FIBERS THEMSELVES USE 'ARAMID FIBERS'.)
GS composite materials
. fiber composites
. . aramid fiber composites
RT aramid fibers
epoxy matrix composites
Kevlar (trademark)
metal matrix composites
polyamide resins
polymer matrix composites
reinforced plastics
whisker composites

aramid fibers
(added May 1992)
SN (PROPERTIES OF ARAMID FIBERS THEMSELVES. FOR ARAMID FIBER UTILIZATION IN COMPOSITES USE "ARAMID FIBER COMPOSITES".)
GS fibers
. reinforcing fibers
. . aramid fibers
. . . Kevlar (trademark)
. synthetic fibers
. . aramid fibers
. . . Kevlar (trademark)
RT aramid fiber composites
composite materials
epoxy matrix composites
fiber composites
fiber orientation
fiber strength
lay-up
plastics
polyamide resins
reinforced plastics
reinforcing materials
resin matrix composites

arc chambers
RT ∞ chambers
electric arcs
plasma generators
thrust chambers

arc clouds
GS clouds (meteorology)
. convection clouds
. . arc clouds
RT cyclogenesis
fronts (meteorology)
mesoscale phenomena
meteorology
observation aircraft
satellite observation
thunderstorms

arc discharges
GS electric current
. electric discharges
. . arc discharges
RT electric arcs

arc generators
RT electric arcs
electric generators
electrostatic generators
∞ generators
∞ induction
inductors
plasma generators
spark gaps
spark plugs
voltage generators

arc heating
UF *Gerdien arc heaters*
GS heating
. arc heating
RT gas heating
image furnaces
plasma heating
resistance heating
Saha equations

arc jet engines
GS engines
. rocket engines
. . electric rocket engines
. . . electrothermal engines
. . . . arc jet engines
RT electric propulsion
electrostatic engines
ion engines
plasma engines
resistojet engines

arc lamps
GS lighting equipment
. luminaires
. . arc lamps
RT carbon arcs
light sources
mercury arcs
searchlights
xenon lamps

arc melting
GS phase transformations
. melting
. . arc melting
RT drop transfer
electroslag refining
vacuum melting
zone melting

arc spraying
UF *plasma arc spraying*
GS spraying
. arc spraying
RT metal spraying

arc welding
GS welding
. fusion welding
. . electric welding
. . . arc welding
. . . . gas tungsten arc welding
. . . . plasma arc welding
RT electron beam welding
heat affected zone
pressure welding
spot welds
sputtering

Arcas rocket vehicles
GS rocket vehicles
. single stage rocket vehicles
. . Arcas rocket vehicles
. sounding rockets
. . Arcas rocket vehicles
RT radiosondes
solid propellant rocket engines
∞ vehicles

archaebacteria
DEF Organisms belonging to the taxonomic kingdom of the same name which are characterized by distinct t- and r-RNAs, the absence of peptoglycan cell walls and their possible replacement by a proteinaceous coat, ether-linked lipids from phytanyl chains, and occurrence in unusually harsh habitats, e.g., methane, halide and thermoacidic environments. These hardy bacteria are significant in the study of the origin of life.
GS microorganisms
. bacteria
. . archaebacteria
RT bacteriology
biological evolution
paleobiology
paleontology

archaeology
RT anthropology
cultural resources
fossils
ground penetrating radar
paleomagnetism

archae
RT perforated shells
rigid structures
shells (structural forms)
trusses

archipelagoes
DEF Seas or areas in seas that contain numerous islands; also the island groups themselves.
RT Aleutian Islands (US)
islands
landforms
seas
Spitsbergen (Norway)
Virgin Islands

architecture
RT acoustics
buildings
construction
∞ construction materials
human factors engineering
illuminating
plant design
Starsite program
structural design
∞ structures

architecture (computers)
DEF The design of system and logic organization and information flow relationships in a computer rather than the circuit and component features.
UF *computer architecture*
RT client server systems
computer components
computer design
concurrent processing
Connection Machine
distributed memory
distributed processing
hypercube multiprocessors
local area networks
logic circuits
logic design
massively parallel processors
memory (computers)
MIMD (computers)
modularity
multidisciplinary design optimization
programmable logic devices
relational data bases
RISC processors
SIMD (computers)
software development tools
supercomputers
systolic arrays
transputers
very large scale integration

Arcomsat
UF *Arabian commercial satellite*
GS artificial satellites
. communication satellites
. . Arcomsat
RT Africa
international cooperation
Saudi Arabian space program
Symphonie satellites
synchronous satellites

Arcon rocket vehicle
GS rocket vehicles
. Arcon rocket vehicle
RT ∞ vehicles

∞ **arcs**
SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW))
RT auroral arcs
curves (geometry)
electric arcs
island arcs
magnetic annular arc
plasma jets
red arcs

Arctic environments
USE **ice environments**

Arctic Ocean
GS oceans
. **Arctic Ocean**
RT Barents Sea
Beaufort Sea (North America)
Greenland
Spitsbergen (Norway)

Arctic regions
GS Northern Hemisphere
. **Arctic regions**
. . subarctic regions
regions
. polar regions
. . **Arctic regions**
. . . subarctic regions
. remote regions
. . **Arctic regions**
. . . subarctic regions
RT Chukchi Sea
climatology
geography
muskegs
nunataks
ozone depletion
polar caps
Siberia
tundra

area
RT ∞ cross sections
geometry
integral calculus
line of sight
∞ sectors
∞ surfaces
volume

area navigation
DEF A method of navigation that permits aircraft operation on any desired course within the coverage of station-referenced navigation signals or within the limits of self-contained system capability.
GS navigation
. air navigation
. . **area navigation**
RT flight paths
ground tracks

Arend-Roland comet
GS celestial bodies
. comets
. . **Arend-Roland comet**
RT solar system

ARES (spacecraft)
USE **Advanced Reconn Electric Spacecraft**

Argentina
GS nations
. **Argentina**
RT Argentine space program
South America

Argentine space program
(added May 1989)
GS programs
. space programs
. . **Argentine space program**
RT Argentina

Argo rocket vehicles
GS rocket vehicles
. multistage rocket vehicles
. . **Argo rocket vehicles**
RT Honest John rocket vehicle
Javelin rocket vehicle
Nike-Ajax missile
solid propellant rocket engines
sounding rockets
∞ vehicles

argon
GS chemical elements
. rare gases
. . **argon**
. . . argon isotopes
gases
. rare gases
. . **argon**
. . . argon isotopes
RT radiation trapping

argon isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **argon isotopes**
. rare gases
. . argon
. . . **argon isotopes**
gases
. rare gases
. . argon
. . . **argon isotopes**

argon lasers
GS stimulated emission devices
. lasers
. . **argon lasers**
RT chemical lasers
continuous wave lasers
gas masers
infrared lasers
Mach-Zehnder interferometers
molecular oscillators
pulsed lasers
Q switched lasers
stimulated emission

argon plasma
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **argon plasma**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **argon plasma**
RT helium plasma
hydrogen plasma
oxygen plasma

argon-oxygen atmospheres
GS controlled atmospheres
. **argon-oxygen atmospheres**
RT aerospace environments
∞ atmospheres
∞ breathing
gas mixtures
portable life support systems
underwater breathing apparatus

Argos system
GS networks
. satellite networks
. . **Argos system**
RT data collection platforms
data transmission
ocean data acquisitions systems
satellite doppler positioning

Argosy MK-1 aircraft
GS Hawker Siddeley aircraft
. **Argosy MK-1 aircraft**
jet aircraft
. turboprop aircraft
. . **Argosy MK-1 aircraft**
monoplanes
. **Argosy MK-1 aircraft**
transport aircraft
. **Argosy MK-1 aircraft**
RT ∞ aircraft

arguments (mathematics)
USE **independent variables**

Argus project
GS programs
. projects
. . **Argus project**
RT thermonuclear explosions

Ariane 4 launch vehicle
(added April 1995)
GS launch vehicles
. Ariane launch vehicle
. . **Ariane 4 launch vehicle**
RT European space programs
space commercialization

Ariane 5 launch vehicle
(added April 1995)
GS launch vehicles
. Ariane launch vehicle
. . **Ariane 5 launch vehicle**
RT Automated Transfer Vehicle
European space programs
space commercialization

Ariane launch vehicle
GS launch vehicles
. **Ariane launch vehicle**
. . Ariane 4 launch vehicle
. . Ariane 5 launch vehicle
RT Eldo launch vehicle
Europa launch vehicles
European Space Agency
European space programs
Geosat project

arid lands
GS land
. **arid lands**
RT barren land
Death Valley (CA)
desertification
desertline
deserts
drought
Earth environment
Earth resources
equatorial regions
Gobi desert
Mojave Desert (CA)
oases
Sahara Desert (Africa)
soils

steppes
wadis

Ariel
DEF A satellite of Uranus orbiting at a mean distance of 192,000 kilometers.
GS celestial bodies
. natural satellites
. . icy satellites
. . . Ariel
. . Uranus satellites
. . . Ariel
RT Uranus (planet)

Ariel 1 satellite
UF *S-51 satellite*
GS artificial satellites
. Ariel satellites
. . Ariel 1 satellite

Ariel 2 satellite
UF *S-52 satellite*
GS artificial satellites
. Ariel satellites
. . Ariel 2 satellite

Ariel 3 satellite
GS artificial satellites
. Ariel satellites
. . Ariel 3 satellite

Ariel 4 satellite
GS artificial satellites
. Ariel satellites
. . Ariel 4 satellite
. scientific satellites
. . UK satellites
. . . Ariel 4 satellite
RT ionospheric electron density
ionospheric sounding

Ariel 5 satellite
DEF One in a series of artificial satellites launched for Britain by the United States.
GS artificial satellites
. Ariel satellites
. . Ariel 5 satellite
. scientific satellites
. . UK satellites
. . . Ariel 5 satellite

Ariel satellites
GS artificial satellites
. Ariel satellites
. . Ariel 1 satellite
. . Ariel 2 satellite
. . Ariel 3 satellite
. . Ariel 4 satellite
. . Ariel 5 satellite
RT geophysical satellites
Thor Delta launch vehicle

Arlee constellation
GS constellations
. Arlee constellation
RT celestial bodies
celestial sphere
stars

Arlee sounding rocket
DEF The largest in terms of weight and volume of the sounding rockets. It has a 44 inch payload capacity.
GS rocket vehicles
. sounding rockets
. . Arlee sounding rocket

Arletid meteoroids
GS celestial bodies
. meteoroid showers
. . Arletid meteoroids
. meteoroids
. . Arletid meteoroids

ARIP (impact prediction)
USE computerized simulation
impact prediction

ARIS instrumentation ship
USE Advanced Range Instrumentation Ship

arithmetic
GS number theory
. arithmetic
. . double precision arithmetic
. . fixed point arithmetic
. . floating point arithmetic
RT addition
calculators
computation
dividing (mathematics)
exponents
integers
multiplication
subtraction
sums

arithmetic and logic units
UF *ALU (computer components)*
logic units
GS computer components
. central processing units
. . arithmetic and logic units
RT computers
double precision arithmetic
logic circuits

Arizona
GS nations
. United States
. . Arizona
RT Colorado Plateau (US)
Colorado River (North America)
Grand Canyon (AZ)
Phoenix (AZ)
Phoenix quadrangle (AZ)

Arkansas
GS nations
. United States
. . Arkansas

arm (anatomy)
GS anatomy
. limbs (anatomy)
. . arm (anatomy)
. . . elbow (anatomy)
. . . forearm
appendages
. arm (anatomy)
. . elbow (anatomy)
. . forearm
RT humerus
scapula
ulna
wrist

ARMA (mathematics)
USE autoregressive moving average

armatures
RT commutators
electric generators
electric motors
electric relays
induction motors
∞ rotating electrical machines
rotors

armed forces
GS armed forces
. armed forces (foreign)
. armed forces (United States)
. navy
RT ∞ military aircraft
∞ military aviation
military spacecraft
∞ military vehicles
tanks (combat vehicles)

armed forces (foreign)
GS armed forces
. armed forces (foreign)
RT disarmament
enemy personnel
∞ military aircraft
military technology
∞ military vehicles
weapons

armed forces (United States)
GS armed forces
. armed forces (United States)
RT defense program
disarmament
∞ military aircraft
military technology
∞ military vehicles
weapons
weapons industry

Armenia
(added August 1993)
GS nations
. Armenia
RT Asia
Europe

armor
RT helmets
metal plates
ordnance
protective clothing
shielding

arms (robotics)
USE robot arms

Army-Navy Instrumentation program
GS programs
. Army-Navy Instrumentation program
RT logistics
military technology

AROD (range-orbit determination)
USE airborne range and orbit determination

∞ **aromatic compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *aryl compounds*
RT ∞ chemical compounds
chloroaromatics
furfuryl alcohol
hydrocarbons
methylidyne
organic compounds
polycyclic aromatic hydrocarbons

Aroos meteorite
GS celestial bodies
. meteorites
. . iron meteorites
. . . Aroos meteorite

arousal
RT alertness
electroencephalography
∞ stimuli

ARPA computer network
DEF The "Advanced Research Projects Agency" of the Department of Defense nationwide computer network incorporating digital communication between large numbers of dissimilar computers as well as direct access to programs, data, storage, etc. shared by all terminals.
GS networks
. communication networks
. . internets
. . . ARPA computer network
. computer networks
. . internets
. . . ARPA computer network
RT computer techniques
queueing theory
satellite communication
spacecraft communication
switching circuits
telecommunication
VSAT (network)

ARQ (communication)
USE automatic repeat request

arrays
GS arrays
. antenna arrays
. . linear arrays
. . . endfire arrays
. . . . Yagi antennas
. . . multispectral linear arrays
. . steerable antennas
. . . inertialess steerable antennas
. . turnstile antennas
. large aperture seismic array
. laser arrays
. multi-anode microchannel arrays
. phased arrays
. solar arrays
. . solar blankets
. synthetic arrays
. systolic arrays
RT antennas
focal plane devices
matrices (mathematics)
photomasks
pushbroom sensor modes
ranking
∞ statistics

∞ **arresters**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT arresting gear
blocking
brakes (for arresting motion)
gaps
lightning

arresting gear
GS landing aids
. arresting gear
safety devices
. arresting gear
RT abort apparatus
aircraft carriers
aircraft safety
antiskid devices
∞ arresters
∞ barriers
brakes (for arresting motion)
crash landing
∞ gear

arrhythmia
DEF Absence of rhythm, as, for example, in heart beat.
GS rates (per time)
. heart rate
. . arrhythmia

arrivals
RT approach
landing

arrow wings
DEF Aircraft wings of V-shaped planform, either tapering or of constant chord, suggesting a stylized arrowhead.
GS airfoils
. wings
. . swept wings
. . . sweptback wings
. . . . arrow wings
planforms
. wing planforms
. . sweptback wings
. . . arrow wings
RT caret wings
delta wings
variable sweep wings

arroyos
GS landforms
. arroyos
RT canyons
drainage patterns
erosion
limnology
rain impact damage
water
water currents
water erosion

arsenates
GS arsenic compounds
. arsenates
RT arsenides
∞ oxygen compounds

arsenic
GS chemical elements
. metalloids
. . arsenic
. . . arsenic isotopes
RT metals

arsenic alloys
GS alloys
. arsenic alloys
RT metalloids

arsenic compounds
GS arsenic compounds
. arsenates
. arsenides
. . aluminum arsenides
. . . aluminum gallium arsenides
. . . indium aluminum arsenides
. . gallium arsenides
. . . aluminum gallium arsenides
. . . indium gallium arsenides
. . indium arsenides
. . . indium aluminum arsenides
. . . indium gallium arsenides
. proustite
RT ∞ chemical compounds
Group 5A compounds

arsenic isotopes
GS chemical elements
. metalloids
. . arsenic
. . . arsenic isotopes
. nuclides
. . isotopes
. . . arsenic isotopes
RT metals
radioactive isotopes

arsenides
GS arsenic compounds
. arsenides
. . aluminum arsenides
. . . aluminum gallium arsenides
. . . indium aluminum arsenides
. . gallium arsenides
. . . aluminum gallium arsenides
. . . indium gallium arsenides
. . indium arsenides
. . . indium aluminum arsenides
. . . indium gallium arsenides
. . proustite
RT arsenates
intermetallics

artemia
GS animals
. invertebrates
. . arthropods
. . . artemia

arteries
GS anatomy
. circulatory system
. . cardiovascular system
. . . blood vessels
. . . . arteries
. . . . . aorta
RT arteriosclerosis
bifurcation (biology)
carotid sinus body
carotid sinus reflex
phonoarteriography
sphygmography
veins

arteriosclerosis
UF *atherosclerosis*
GS diseases
. arteriosclerosis
RT angina pectoris
arteries
cholesterol
circulatory system
coronary artery disease
myocardial infarction

arthritis
GS diseases
. arthritis
RT bones
calcification
joints (anatomy)
rheumatic diseases

arthropods
GS animals
. invertebrates
. . arthropods
. . . artemia
. . . crabs
. . . insects
. . . . bees
. . . . bollworms
. . . . chironomus flies
. . . . cockroaches

. . . . . Coleoptera
. . . . . beetles
. . . . . tribolia
. . . . . boll weevils
. . . . . crickets
. . . . . Drosophila
. . . . . fireflies
. . . . . grasshoppers
. . . . . locusts
. . . . . moths
. . . . . silkworms
. . . . . spiders
RT exoskeletons
larvae

articulation (speech)
GS speech
. articulation (speech)
RT languages
speech defects

artifacts
RT anthropology
antiquities
culture (social sciences)
museums

artificial cardiac pacemaker
GS medical equipment
. artificial cardiac pacemaker
RT biotechnology
blood circulation
cardiology
circulatory system
heart
pulmonary circulation

artificial clouds
GS clouds (meteorology)
. artificial clouds
. . chemical clouds
. . . barium ion clouds
RT weather modification

artificial ears
GS medical equipment
. prosthetic devices
. . artificial ears
RT ear

artificial gravity
DEF A simulated gravity established within a space vehicle by rotation or acceleration.
GS gravitation
. artificial gravity
RT acceleration stresses (physiology)
∞ astronautics
environmental control
gravity gradient satellites
human centrifuges
life support systems
lower body negative pressure
rotating environments
spin dynamics
weightlessness

artificial harbors
GS waterways
. harbors
. . artificial harbors
RT cargo ships
deepwater terminals
dredging
marine technology
oceanography
offshore docking
offshore platforms
ship terminals
tanker ships
tanker terminals
∞ harbors
terminal facilities
transportation

artificial heart valves
GS medical equipment
. artificial heart valves
valves
. heart valves
. . artificial heart valves
RT biotechnology
blood circulation
blood pumps
heart
heart implantation

artificial intelligence
DEF A subfield of computer science concerned with the concepts and methods of symbolic inference by a computer and the symbolic representation of the knowledge to be used in making inferences. Used for machine recognition.
UF *machine recognition*
GS intelligence
. artificial intelligence
RT automata theory
belief networks
bionics
character recognition
cognition
computer vision
computers
decision support systems
depersonalization
expert systems
genetic algorithms
hypertext
information processing (biology)
intellect
knowledge based systems
knowledge bases (artificial intelligence)
knowledge representation
∞ logic
logic programming
machine learning
natural language processing
perception
pilot support systems
predicate calculus
predicate logic
Prolog (programming language)
robotics
robots
self organizing systems
theorem proving
voice data processing

artificial radiation belts
GS particles
. charged particles
. . magnetically trapped particles
. . . radiation belts
. . . . artificial radiation belts
. corpuscular radiation
. . radiation belts
. . . artificial radiation belts
. trapped particles
. . magnetically trapped particles
. . . radiation belts
. . . . artificial radiation belts
RT inner radiation belt
nuclear explosions
outer radiation belt
∞ radiation

artificial respiration
USE resuscitation

artificial satellites
DEF Man-made satellites.
GS artificial satellites
active satellites
. . SYNCOM satellites
. . . Early Bird satellites
. . . SYNCOM 1 satellite
. . . SYNCOM 2 satellite
. . . SYNCOM 3 satellite
. . . SYNCOM 4 satellite
. Alouette satellites
. . Alouette 1 satellite
. . Alouette 2 satellite
. . Alouette B satellite
. Arabsat
. Ariel satellites
. . Ariel 1 satellite
. . Ariel 2 satellite
. . Ariel 3 satellite
. . Ariel 4 satellite
. . Ariel 5 satellite
. BESS (satellite)
. biosatellites
. . Biosatellite 1
. . Biosatellite 2
. . Biosatellite 3
. . Orbiting Frog Otolith
. . Sputnik 2 satellite
. communication satellites
. . ACTS
. . aeronautical satellites
. . . Aerosat satellites
. . Arcomsat
. . Communications Technology Satellite
. . . ComStar C
. . . NATO 3B satellite
. . ComStar satellites
. . direct broadcast satellites
. . European Communications Satellite
. . Intelsat satellites
. . low frequency transionospheric satellites
. . L-Sat
. . Marecs maritime satellites
. . Marots (ESA)
. . Molniya satellites
. . MSAT
. . Palapa satellites
. . . Palapa 2 satellite
. . Raduga satellite
. . RCA Satcom satellites
. . Relay satellites
. . . Relay 1 satellite
. . . Relay 2 satellite
. . Symphonie satellites
. . SYNCOM satellites
. . . Early Bird satellites
. . . SYNCOM 1 satellite
. . . SYNCOM 2 satellite
. . . SYNCOM 3 satellite
. . . SYNCOM 4 satellite
. . Westar satellites
. COSPAS
. Courier satellite
. Diademe satellites
. Discoverer satellites
. Dodge satellite
. EROS (satellites)
. ESA satellites
. . Aerosat satellites
. . COS-B satellite
. . ERS-1 (ESA satellite)

. . ERS–2 (esa satellite)
. . ESRO 1 satellite
. . ESRO 2 satellite
. . ESRO 4 satellite
. . European Communications Satellite
. . Exosat satellite
. . GEOS satellites (ESA)
. . HEOS satellites
. . . HEOS A satellite
. . . HEOS B satellite
. . Hipparcos satellite
. . Infrared Space Observatory (ISO)
. . L–Sat
. . Magellan ultraviolet astronomy satellite
. . Marecs maritime satellites
. . Marots (ESA)
. . METEOSAT satellite
. . OTS (ESA)
. . TD satellites
. . . TD–1 satellite
. European 1 spacecraft
. evasive satellites
. French satellites
. . D–1 satellite
. . D–2 satellites
. . EOLE satellites
. . FR–1 satellite
. . GEOLE satellites
. . PEOLE satellites
. . Poseidon satellite
. . SPOT (French satellite)
. . SRET satellites
. . . SRET 1 satellite
. . . SRET 2 satellite
. geodetic satellites
. . ANNA satellites
. . Explorer 29 satellite
. . Explorer 36 satellite
. . GEOLE satellites
. . GEOS 1 satellite
. . GEOS 2 satellite
. . GEOS 3 satellite
. . Geosat satellites
. . LAGEOS satellite
. . PAGEOS satellite
. . Vanguard 1 satellite
. geophysical satellites
. . Cosmos satellites
. . . Cosmos 2 satellite
. . . Cosmos 3 satellite
. . . Cosmos 5 satellite
. . . Cosmos 6 satellite
. . . Cosmos 14 satellite
. . . Cosmos 44 satellite
. . . Cosmos 54 satellite
. . . Cosmos 71 satellite
. . . Cosmos 110 satellite
. . . Cosmos 137 satellite
. . . Cosmos 144 satellite
. . . Cosmos 149 satellite
. . . Cosmos 166 satellite
. . . Cosmos 186 satellite
. . . Cosmos 188 satellite
. . . Cosmos 206 satellite
. . . Cosmos 213 satellite
. . . Cosmos 224 satellite
. . . Cosmos 225 satellite
. . . Cosmos 381 satellite
. . . Cosmos 954 satellite
. . . Cosmos 1129 satellite
. . . Intercosmos satellites
. . Explorer 6 satellite
. . Explorer 10 satellite
. . Explorer 12 satellite
. . Explorer 45 satellite
. . OGO
. . . EGO
. . . OGO–3
. . . OGO–5
. . . OGO–A
. . . POGO
. . . . OGO–4
. . . . OGO–6
. . . . OGO–C
. . OSO
. . . AOSO
. . . OSO–1
. . . OSO–2
. . . OSO–3
. . . OSO–4
. . . OSO–5
. . . OSO–6
. . . OSO–7
. . . OSO–8
. . . OSO–C
. . Radiation and Meteoroid satellite
. . Sputnik 3 satellite
. . Vanguard 3 satellite
. GEOS–D satellite
. gravity gradient satellites
. . ATS
. . . ATS 1
. . . ATS 2
. . . ATS 3
. . . ATS 4
. . . ATS 5
. . . ATS 6
. . . ATS 7
. . . ATS 8
. . ORBIS CAL satellite
. GREB satellites
. Helios satellites
. . Helios 1
. . Helios 2
. . Helios A
. . Helios B
. Injun satellites
. . Explorer 25 satellite
. . Injun 1 satellite
. . Injun 3 satellite
. . Injun 4 satellite
. INMARSAT satellites
. Inspector satellite
. IRIS satellites
. ISIS satellites
. . Alouette 2 satellite
. . ISIS–A
. . ISIS–B
. . ISIS–X
. Landsat satellites
. . Landsat 1
. . Landsat 2
. . Landsat 3
. . Landsat 4
. . Landsat 5
. . Landsat 6
. . Landsat 7
. . Landsat E
. . Landsat F
. Lincoln Experimental Satellites
. lunar satellites
. . Explorer 18 satellite
. . Explorer 28 satellite
. . IMP
. . Lunar Orbiter
. . . Lunar Orbiter 1
. . . Lunar Orbiter 2
. . . Lunar Orbiter 3
. . . Lunar Orbiter 4
. . . Lunar Orbiter 5
. . orbiting lunar stations
. Mapsat
. Marisat satellites
. . Marisat 1 satellite
. maritime satellites
. . ERS–1 (ESA satellite)
. . Marecs maritime satellites
. . Marots (ESA)
. meteorological satellites
. . AEROS satellite
. . Cosmos 144 satellite
. . D–2 satellites
. . DMSP satellites
. . Elektron satellites
. . . Elektron 1 satellite
. . . Elektron 2 satellite
. . . Elektron 4 satellite
. . EOLE satellites
. . ESSA satellites
. . . ESSA 1 satellite
. . . ESSA 2 satellite
. . . ESSA 3 satellite
. . . ESSA 4 satellite
. . . ESSA 5 satellite
. . . ESSA 6 satellite
. . . ESSA 7 satellite
. . . ESSA 8 satellite
. . . ESSA 9 satellite
. . Explorer 9 satellite
. . Explorer 17 satellite
. . Explorer 19 satellite
. . GEOLE satellites
. . GOES satellites
. . . GOES 1
. . . GOES 2
. . . GOES 3
. . . GOES 4
. . . GOES 5
. . . GOES 6
. . . GOES 7
. . . GOES 8
. . . GOES 9
. . METEOSAT satellite
. . Nimbus satellites
. . . Nimbus 1 satellite
. . . Nimbus 2 satellite
. . . Nimbus 3 satellite
. . . Nimbus 4 satellite
. . . Nimbus 5 satellite
. . . Nimbus 6 satellite
. . . Nimbus 7 satellite
. . NOAA satellites
. . . NOAA 2 satellite
. . . NOAA 3 satellite
. . . NOAA 4 satellite
. . . NOAA 5 satellite
. . . NOAA 6 satellite
. . . NOAA 7 satellite
. . . NOAA 8 satellite
. . . NOAA 9 satellite
. . . NOAA 10 satellite
. . . NOAA 11 satellite
. . . NOAA 12 satellite
. . . NOAA 14 satellite
. . San Marco satellites
. . . San Marco 1 satellite
. . . San Marco 2 satellite
. . . San Marco 3 satellite
. . SEOCS (satellite)
. . SIRS B satellite
. . Sputnik 1 satellite
. . Sputnik 2 satellite
. . Sputnik 3 satellite
. . SRET satellites
. . . SRET 1 satellite
. . . SRET 2 satellite

. . Synchronous Earth Observatory satellite
. . . SMS 1
. . . SMS 2
. . Synchronous Meteorological Satellite
. . . SMS 1
. . . SMS 2
. . TIROS satellites
. . . ITOS satellites
. . . . ITOS 1
. . . . ITOS 2
. . . . ITOS 3
. . . . ITOS 4
. . . TIROS 1 satellite
. . . TIROS 2 satellite
. . . TIROS 3 satellite
. . . TIROS 4 satellite
. . . TIROS 5 satellite
. . . TIROS 6 satellite
. . . TIROS 7 satellite
. . . TIROS 8 satellite
. . . TIROS 9 satellite
. . . TIROS 10 satellite
. . . TIROS M
. . . TIROS N series satellites
. . . . NOAA 6 satellite
. . Vanguard 2 satellite
. Midas satellites
. . Midas 2 satellite
. . Midas 3 satellite
. . Midas 4 satellite
. . Midas 5 satellite
. . Midas 6 satellite
. . Midas 7 satellite
. Multispectral Resource Sampler
. navigation satellites
. . Aerosat satellites
. . Explorer 22 satellite
. . navigation technology satellites
. . NAVSTAR satellites
. . Nova satellites
. . Refsat
. . Transit Attitude Control satellite
. . Transit satellites
. orbital workshops
. . Salum workshops
. . . Salum 1 workshop
. . . Salum 5 workshop
. . Skylab 1
. . Skylab 2
. . Skylab 3
. . Skylab 4
. PAS
. passive satellites
. . Beacon satellites
. . . Beacon Explorer A
. . . Explorer 22 satellite
. . Echo satellites
. . . Echo 1 satellite
. . . Echo 2 satellite
. . LAGEOS (satellite)
. . PAGEOS satellite
. Pegasus satellites
. Polyot satellites
. ROSAT mission
. SAGE satellite
. Samos
. SerSat
. scientific satellites
. . AMPTE (satellites)
. . astronomical satellites
. . . Astronomical Netherlands Satellite
. . . Gamma Ray Observatory
. . . Ginga satellite
. . . HEAO
. . . . HEAO 1
. . . . HEAO 2
. . . . HEAO 3
. . . . HEAO 4
. . . Hubble Space Telescope
. . . Infrared Astronomy Satellite
. . . Infrared Space Observatory (ISO)
. . . IUE
. . . Large Deployable Reflector
. . . Magellan ultraviolet astronomy satellite
. . . OAO
. . . . OAO 1
. . . . OAO 2
. . . . OAO 3
. . . OSO
. . . . AOSO
. . . . OSO–1
. . . . OSO–2
. . . . OSO–3
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. . . . OSO–5
. . . . OSO–6
. . . . OSO–7
. . . . OSO–8
. . . . OSO–C
. . . Quasat
. . . SAS
. . . . Explorer 53 satellite
. . . . SAS–1
. . . . SAS–2
. . . . SAS–3
. . . Space Infrared Telescope Facility
. . . Spartan satellites
. . . Terma satellite
. . . X Ray Astrophysics Facility
. . ATS
. . . ATS 1
. . . ATS 2
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. . . ATS 6
. . . ATS 7
. . . ATS 8
. . Azur satellite
. . Cannonball 2 satellite
. . CRRES (satellite)
. . DIAL satellite
. . Environmental Research Satellites
. . . ERS 17
. . . ERS 18
. . . Intasat satellite
. . EXOS satellites
. . . EXOS–A satellite
. . . EXOS–B satellite
. . . EXOS–C satellite
. . . EXOS–D satellite
. . Exosat satellite
. . Explorer satellites
. . . Applications Explorer Satellites
. . . Cosmic Background Explorer satellite
. . . Dust Air Density Explorer
. . . Dynamics Explorer satellites
. . . . Dynamics Explorer 1 satellite
. . . . Dynamics Explorer 2 satellite
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. . . Explorer 54 satellite
. . . Explorer 55 satellite
. . . Extreme Ultraviolet Explorer satellite
. . . Far UV Spectroscopic Explorer
. . . IMP
. . . International Magnetospheric Explorer
. . . International Sun Earth Explorers
. . . . International Sun Earth Explorer 1
. . . . International Sun Earth Explorer 2
. . . . International Sun Earth Explorer 3
. . . Micrometeoroid Explorer satellites
. . . Radio Astronomy Explorer satellite
. . . Solar Mesosphere Explorer
. . . Uhuru satellite
. . . X Ray Timing Explorer
. . Geopotential Research Mission
. . Hawkeye satellites
. . Long Duration Exposure Facility
. . LZEEBE satellite
. . MagSat satellites
. . . MagSat 1 satellite
. . . Magsat A satellite
. . . MagSat B satellite
. . OPBIS
. . . OPBIS CAL satellite
. . OV–1 satellites
. . OV–2 satellites
. . OV–3 satellites
. . OV–4 satellites
. . OV–5 satellites

. . SCATHA satellite
. . small scientific satellites
. . UK satellites
. . . Ariel 4 satellite
. . . Ariel 5 satellite
. . . Miranda satellite
. . . UK 4 satellite
. . Upper Atmosphere Research Satellite (UARS)
. SCORE satellite
. SEASAT satellites
. . SEASAT 1
. . SEASAT-B satellite
. Shuttle pallet satellites
. Skynet satellites
. Snapshot satellite
. solar power satellites
. Solar Radiation 1 satellite
. Solar Radiation 3 satellite
. Soviet satellites
. . Cosmos 782 satellite
. . Cosmos 936 satellite
. . Cosmos satellites
. . . Cosmos 2 satellite
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. . . Cosmos 14 satellite
. . . Cosmos 44 satellite
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. . . Cosmos 381 satellite
. . . Cosmos 954 satellite
. . . Cosmos 1129 satellite
. . . Intercosmos satellites
. . Granat satellite
. . Molniya satellites
. . Prognoz satellites
. . Proton satellites
. . . Proton 1 satellite
. . . Proton 2 satellite
. . . Proton 3 satellite
. . . Proton 4 satellite
. . Raduga satellite
. . Sputnik satellites
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. . Venera satellites
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. . . Venera 12 satellite
. space stations
. . Automatic Universal Orbiting Stations
. . Columbus space station
. . Halo Orbit space station
. . International Space Station
. . man tended free flyers
. . Mir space station
. . . Kvant modules
. . . Priroda module
. . orbiting lunar stations
. . Salyut space station
. . Skylab 1
. . Skylab 2
. . Skylab 3
. . Skylab 4
. . Space Operations Center (NASA)
. . Space Station Freedom
. . space station polar platforms
. synchronous satellites
. . AEROS satellite
. . Aerosat satellites
. . Anik satellites
. . . Anik 1
. . . Anik 2
. . . Anik 3
. . GOES satellites
. . . GOES 1
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. . . GOES 6
. . . GOES 7
. . . GOES 8
. . . GOES 9
. . Miranda satellite
. . SIRIO satellite
. . StormSat satellite
. . Synchronous Earth Observatory satellite
. . . SMS 1
. . . SMS 2
. . Synchronous Meteorological Satellite
. . . SMS 1
. . . SMS 2
. . SYNCOM satellites
. . . Early Bird satellites
. . . SYNCOM 1 satellite
. . . SYNCOM 2 satellite
. . . SYNCOM 3 satellite
. . . SYNCOM 4 satellite
. . TD satellites
. . . TD-1 satellite
. Telstar satellites
. . Telstar 1 satellite
. . Telstar 2 satellite
. tethered satellites
. Vanguard satellites
. . Vanguard 1 satellite
. . Vanguard 2 satellite
. . Vanguard 3 satellite
. Engineering Test Satellites
. Vela satellites

RT flexible spacecraft
inflatable spacecraft
interplanetary spacecraft
lunar orbits
lunar spacecraft
maneuverable spacecraft
manned spacecraft
military spacecraft
National Oceanic Satellite System
natural satellites
observatories
orbits
reconnaissance spacecraft
satellite sounding

∞ satellites
space capsules
space laboratories
Telstar project
unmanned spacecraft

artillery

GS weapons
. guns (ordnance)
. . artillery
. . . howitzers
. . . precision guided projectiles

RT gun launchers
gunnery training
missiles
rifles
Sabot projectiles

artillery fire

RT∞ barrages
gunfire

arts

GS arts
. graphic arts
. . animation
. . . computer animation

RT creativity
music

Aryabhata

USE **Indian spacecraft**

aryl compounds

USE **aromatic compounds**

ASA

USE **acetylsalicylic acid**

asbestos

GS minerals
. asbestos

RT Amberlite (trademark)
electrical insulation
insulation
nonflammable materials
serpentine
thermal insulation

ascent

GS ascent
. climbing flight

RT balloons
descent
Lunar Module Ascent Stage
takeoff

ascent propulsion systems

GS propulsion
. ascent propulsion systems
propulsion system configurations
. ascent propulsion systems

RT Lunar Module
missiles
propellants
rocket propellants
space flight
Space Shuttle Ascent Stage

∞ systems

ascent trajectories

GS trajectories
. . ascent trajectories

RT ballistic trajectories
climbing flight
coasting flight
descent trajectories
flight mechanics
guidance (motion)
injection guidance

lofting
Lunar Module Ascent Stage
midcourse trajectories
missile trajectories
orbit insertion
parabolic flight
post boost propulsion system
rendezvous trajectories
spacecraft trajectories

ascorbic acid
UF *vitamin C*
GS acids
. **ascorbic acid**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **ascorbic acid**
vitamins
. **ascorbic acid**

ascorbic acid metabolism
GS metabolism
. **ascorbic acid metabolism**
RT vitamins

ASCR reactor
USE **advanced sodium cooled reactor**

ASDE
USE **airport surface detection equipment**

ASE (aerodynamics)
USE **aeroservoelasticity**

ashes
GS **ashes**
. fly ash
RT air pollution
coal
combustion products
cultivation
fertilizers
fire damage
forest fires
lignite
reaction products
residues

Asia
GS continents
. **Asia**
RT Afghanistan
Armenia
Azerbaijan
Bangladesh
Brunei
Burma
Cambodia
China
Commonwealth of Independent States
Georgia (Eurasia)
Himalayas
Hong Kong
India
Iran
Iraq
Israel
Japan
Kazakhstan
Kuwait
Kyrgyzstan
Laos
Lebanon
Malaysia
Middle East
Mongolia
nations
Nepal
North Korea
Pakistan
Papua New Guinea
Qatar
Red Sea
Russian Federation
Saudi Arabia
Sea of Japan
Siberia
Sikkim
Singapore
South Korea
Southeast Asia
Southern Yemen
Sri Lanka
Syria
Taiwan
Tajikistan
Thailand
Tibet
tundra
Turkmenistan
U.S.S.R.
Uzbekistan
Vietnam
Yemen

ASIC
USE **application specific integrated circuits**

aspartates
GS biopolymers
. proteins
. . **aspartates**
esters
. **aspartates**
organic compounds
. proteins
. . **aspartates**
RT amino acids
aspartic acid

aspartic acid
GS acids
. amino acids
. . **aspartic acid**
. carboxylic acids
. . **aspartic acid**
organic compounds
. amino acids
. . **aspartic acid**
. carboxylic acids
. . **aspartic acid**
RT **aspartates**
peptides

aspect ratio
DEF The ratio of the square of the span of an airfoil to the total airfoil area, or the ratio of its span to its mean chord.
GS ratios
. **aspect ratio**
. . high aspect ratio
. . low aspect ratio
RT aerodynamic characteristics
airfoils
fineness ratio
lift
∞ span
wings

Aspergillus
GS plants (botany)
. fungi
. . **Aspergillus**
RT infectious diseases
∞ mold

asphalt
DEF A dark brown to black cementitious material, in which the predominating constituents are bitumens which occur in nature or are obtained in petroleum processing.
GS products
. petroleum products
. . **asphalt**
RT amorphous materials
pavements
pitch (material)
tars

asphaltenes
DEF Components of bitumens that are soluble in carbon disulphide but not in paraffin naphtha, constitute the solid dispersed particles of the bitumens, and consist of high molecular weight hydrocarbons.
RT coal
coal derived liquids
coal liquefaction
hydrogenation

aspheres
USE **aspheric optics**

aspheric optics
(added June 1995)
DEF Lenses whose surfaces are custom tuned to specific applications, thereby correcting aberrations in an optical system.
UF *aspheres*
asymmetrical optics
nonspherical optics
GS lenses
. **aspheric optics**
RT asphericity
laser fusion
lens design
optical materials
∞ optics

asphericity
RT aberration
aspheric optics
geometrical optics
∞ optics
refraction
spheres

asphyxia
RT anoxia
respiration
signs and symptoms

aspiration
USE vacuum

ASRM (STS)
USE **Advanced Solid Rocket Motor (STS)**

ASROC engine
GS engines
. rocket engines
. . solid propellant rocket engines
. . . **ASROC engine**
RT **antisubmarine warfare**
torpedoes

Assateague Island (MD-VA)
GS landforms
. islands
. . **Assateague Island (MD-VA)**
RT Atlantic Ocean

Maryland
Virginia

assaulting
USE **attacking (assaulting)**

assaying
RT chemical analysis
immunoassay
Mars surface samples
particulate sampling
radioimmunoassay
sampling

assembler routines
GS computer programming
. **assembler routines**
computer programs
. computer systems programs
. . **assembler routines**
RT compilers
disk operating system (DOS)
operating systems (computers)

assemblies
GS **assemblies**
. subassemblies
. tail assemblies
. . horizontal tail surfaces
. . sweptback tail surfaces
. . swing tail assemblies
. . T tail surfaces
. . trapezoidal tail surfaces
RT accumulations
assembling
∞ assembly
collocation
∞ components
fabrication
mosaics
strings

assembling
GS **assembling**
. orbital assembly
RT **assemblies**
∞ **assembly**
∞ attachment
clean rooms
collection
construction
fabrication
fitting
installing
∞ joining
mounting
preparation
rigging
space manufacturing

∞ **assembly**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT **assemblies**
assembling
collocation

Assembly language
GS **languages**
. programming languages
. . **Assembly language**
. . . autocoders
. . . COMPASS (programming language)
. . . MAP (programming language)
RT computer programming
computer programs
computer systems programs
machine oriented languages

Assess program
UF *Spacelab simulation flights*
GS programs
. NASA programs
. . **Assess program**
RT space shuttles

assessments
GS **assessments**
. damage assessment
. technology assessment
RT evaluation
ratings
revenue
value

ASSET gliders
GS gliders
. **ASSET gliders**
RT ∞ aircraft
hypersonic gliders
lifting reentry vehicles

ASSET project
GS programs
. projects
. . **ASSET project**
RT aerothermodynamics
environmental tests

assignment
USE **allocations**

assimilation
RT dispersing
distributing
∞ distribution
material absorption

association reactions
DEF Gas phase chemical processes in which two molecular species A and B react to form a larger molecule AB. In astrophysics these processes are involved in the "condensation" of small gaseous molecules into larger species.
GS chemical reactions
. **association reactions**
gas–gas interactions
. **association reactions**
RT astrophysics
chemical equilibrium
condensing
endothermic reactions
exothermic reactions
interstellar chemistry
molecular gases
molecular interactions
oxidation
photochemical reactions
photooxidation
reaction kinetics
vapor phases

associations
USE **organizations**

associative processing (computers)
DEF Byte-variable computer processing with multifield search, arithmetic, and logic capability.
GS data processing
. **associative processing (computers)**
RT digital computers
multiprocessing (computers)
parallel processing (computers)
pipelining (computers)
∞ processing

assumptions
RT hypotheses
inference
risk
simplification
∞ theories

assurance
RT insurance (contracts)
quality control
redundancy
reliability

Assured Crew Return Vehicle
(added September 1995)
DEF An aerospace vehicle designed to return space station crews to Earth quickly (less than 24 hours) in the event of crew illness/injury, space station catastrophe/failure, or transportation element catastrophe/failure.
UF *ACRV*
GS recovery vehicles
. **Assured Crew Return Vehicle**
RT emergency life sustaining systems
escape capsules
International Space Station
lifeboats
rescue operations
return to Earth space flight
safety management
Soyuz spacecraft
survival equipment
X–38 crew return vehicle

astatine
GS chemical elements
. halogens
. . **astatine**
metals
. **astatine**

astatine isotopes
GS chemical elements
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . **astatine isotopes**
metals
. **astatine isotopes**

ASTEC solar turboelectric generator
GS auxiliary power sources
. solar auxiliary power units
. . **ASTEC solar turboelectric generator**
electric generators
. rotating generators
. . turbogenerators
. . . **ASTEC solar turboelectric generator**
. solar generators
. . solar auxiliary power units
. . . **ASTEC solar turboelectric generator**
turbomachinery
. turbogenerators
. . **ASTEC solar turboelectric generator**
RT Rankine cycle
sun
thermoelectric generators

asteroid belts
DEF The location of the orbits of most of the minor planets (estimated at a half million asteroids) between Mars and Jupiter; about 2000

asteroids have been assigned numbers and names.
GS celestial bodies
. asteroid belts
. . Toro asteroid
RT Amor asteroid
Amphitrite asteroid
Apollo asteroids
asteroid collisions
asteroids
∞ belts
Ceres asteroid
Chiron
Gaspra asteroid
Icarus asteroid
Ida asteroid
meteoroids
regions
solar system
space debris
Toutatis asteroid
Vesta asteroid

asteroid capture
DEF The transfer of an asteriod or comet from the influence of a planet into that of another planet or neutral satellite.
RT asteroids
celestial bodies
containment
enclosures
payloads
retaining
solar system

asteroid collisions
(added July 1997)
GS collisions
. asteroid collisions
RT asteroid belts
asteroid detection
cometary collisions
craters
Earth (planet)
hypervelocity impact
meteorite collisions

asteroid detection
(added July 1997)
GS detection
. asteroid detection
RT asteroid collisions
asteroids
sky surveys (astronomy)
space observations (from Earth)
space surveillance (ground based)
stellar occultation

asteroid missions
DEF Space missions for the study of asteroids and related celestial bodies.
GS space missions
. asteroid missions
. . Comet Rendezvous Asteroid Flyby Mission
. . Near Earth Asteroid Rendezvous Mission
. . Rosetta mission
RT asteroids
Clementine spacecraft
flyby missions
interplanetary flight
∞ missions
space exploration

asteroids
DEF Small celestial bodies revolving around the sun, most having orbits between those of Mars and Jupiter.
UF *minor planets*
GS celestial bodies
. asteroids
. . Amor asteroid
. . Amphitrite asteroid
. . Apollo asteroids
. . Ceres asteroid
. . Chiron
. . EROS asteroid
. . Gaspra asteroid
. . Icarus asteroid
. . Ida asteroid
. . Toro asteroid
. . Toutatis asteroid
. . Vesta asteroid
RT asteroid belts
asteroid capture
asteroid detection
asteroid missions
Kuiper belt
meteoroids
solar system
space debris

asthenosphere
GS diseases
. eye diseases
. . asthenopia
RT fatigue (biology)

asthenosphere
(added August 1994)
DEF Layer or shell of the Earth below the lithosphere which is weak and in which isostatic adjustments take place, magmas may be generated, and seismic waves are strongly attenuated.
RT boundary layers
Earth mantle
Earth planetary structure
lithosphere
planetary structure
seismology
tectonics

asthma
GS diseases
. respiratory diseases
. . asthma

astigmatism
DEF A defect of an optical system in consequence of which rays from a point fail to meet in a focal point resulting in a blurred and imperfect image.
GS diseases
. eye diseases
. . astigmatism
RT distortion
focusing
geometrical optics
haploscopes
lenses
∞ optics
refraction
stigmatism

ASTP
USE Apollo Soyuz test project

astrionics
RT ∞ astronautics
avionics
∞ control
∞ electronics
guidance (motion)
satellite communication
single event upsets
spacecraft communication
spacecraft electronic equipment
spacecraft instruments
∞ test equipment

Astro missions (STS)
GS payloads
. Space Shuttle payloads
. . Astro missions (STS)
RT ∞ missions
spaceborne astronomy
spaceborne telescopes
Spacelab payloads

Astro vehicle
SN (EXCLUDES STS)
GS maneuverable spacecraft
. Astro vehicle
manned spacecraft
. Astro vehicle
reentry vehicles
. recoverable spacecraft
. . Astro vehicle
soft landing spacecraft
. Astro vehicle
RT aerospace planes
boostglide vehicles
ferry spacecraft
lifting reentry vehicles
∞ spacecraft

Astrobee 1500 rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . Astrobee rocket vehicles
. . . Astrobee 1500 rocket vehicle
. sounding rockets
. . Astrobee rocket vehicles
. . . Astrobee 1500 rocket vehicle
RT solid propellant rocket engines

Astrobee rocket vehicles
GS rocket vehicles
. multistage rocket vehicles
. . Astrobee rocket vehicles
. . . Astrobee 1500 rocket vehicle
. sounding rockets
. . Astrobee rocket vehicles
. . . Astrobee 1500 rocket vehicle
RT Genie rocket vehicle
solid propellant rocket engines
∞ vehicles

astrobiology
USE exobiology

astrodynamics
DEF The practical application of celestial mechanics, astroballistics, propulsion theory, and allied fields to the problem of planning and directing the trajectories of space vehicles.
GS classical mechanics
. space mechanics
. . astrodynamics
RT ∞ astronautics
astronomical observatories
celestial bodies
celestial mechanics
∞ dynamics
interplanetary flight
orbital mechanics

orbital resonances (celestial mechanics)
orbits
∞ science
space exploration
space flight
space navigation
∞ spacecraft
trajectory analysis

astrography
SN (EXCLUDES ASTRONOMICAL PHOTOGRAPHY)
RT astronomical maps
mapping
planetary mapping

Astroguide Navigation System
GS navigation
. celestial navigation
. . **Astroguide Navigation System**
. inertial navigation
. . **Astroguide Navigation System**
RT inertial coordinates
star trackers
∞ systems

astrolabes
DEF Instruments designed to observe the positions and measure the altitudes of celestial bodies.
GS measuring instruments
. indicating instruments
. . **astrolabes**
RT altimeters
astrometry
astronomical observatories
astronomy
celestial bodies
position (location)
position errors
solar position
star distribution
star trackers
stars

Astroloy (trademark)
GS alloys
. chromium alloys
. . **Astroloy (trademark)**
. cobalt alloys
. . **Astroloy (trademark)**
. high strength alloys
. . **Astroloy (trademark)**
. nickel alloys
. . **Astroloy (trademark)**
. ternary alloys
. . **Astroloy (trademark)**

astromasts
USE **longerons**

astrometry
RT astrolabes
astronomical maps
astronomical photography
astronomical polarimetry
astronomy
double stars
Hipparcos satellite
∞ measurement
parallax
solar diameter
stellar parallax

Astron thermonuclear reactor
GS nuclear reactors
. **Astron thermonuclear reactor**
RT relativistic plasmas
thermonuclear power generation
thermonuclear reactions

astronaut locomotion
GS locomotion
. **astronaut locomotion**
RT extravehicular activity
extravehicular mobility units
intravehicular activity
life support systems
man operated propulsion systems
manned maneuvering units
orbital workers

astronaut maneuvering equipment
GS **astronaut maneuvering equipment**
. manned maneuvering units
RT extravehicular activity
extravehicular mobility units
human factors engineering
MMLSS
intravehicular activity
self maneuvering units
walking machines

astronaut performance
GS human performance
. **astronaut performance**
. . blackout prevention
RT confinement
confining
human factors engineering
intravehicular activity
man machine systems
operator performance
∞ performance
physiological factors
pilot performance
psychological factors
space psychology
spacecraft performance
weightlessness

astronaut training
GS education
. flight training
. . space flight training
. . . **astronaut training**
learning
. **astronaut training**
RT ejection training
pilot training
space maintenance
space psychology
training simulators

∞ **astronautics**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aerospace environments
artificial gravity
astrionics
astrodynamics
astronauts
astronomy
auxiliary propulsion
avionics
bioastronautics
Biosatellite 3
cosmonauts
Earth–Venus trajectories
human factors engineering
lunar bases
propulsion
soft landing
space exploration
space flight
space maintenance
space navigation
spacecraft docking
weightlessness

astronauts
GS personnel
. flying personnel
. . **astronauts**
. . . orbital workers
RT ∞ astronautics
awards
cosmonauts
crew experiment stations
crew observation stations
crew workstations
crews
pilots (personnel)
spacecrews

astronavigation
GS navigation
. celestial navigation
. . **astronavigation**
RT air navigation
interplanetary navigation
interstellar travel
radio navigation
space navigation

astronomical catalogs
UF *star catalogs*
GS documents
. catalogs (publications)
. . **astronomical catalogs**
RT ∞ catalogs
classifications
ephemerides
northern sky
sky surveys (astronomy)
Southern sky
tables (data)

astronomical coordinates
DEF Coordinates defining a point on the surface of the Earth, or of the geoid, in which the local direction of gravity is used as a reference.
GS coordinates
. **astronomical coordinates**
RT azimuth
celestial reference systems
cylindrical coordinates
geocentric coordinates
northern sky
planetocentric coordinates
planispheres
polar coordinates
reference stars
solar longitude
spherical coordinates

astronomical interferometry
(added June 1993)
GS interferometry
. **astronomical interferometry**
RT astronomy
etalons
infrared interferometers
interferometers
radio astronomy
Sagnac effect
space observations (from Earth)
spaceborne astronomy
very long base interferometry

astronomical maps
GS maps
. **astronomical maps**

. . planispheres
RT astrography
astrometry
celestial reference systems
celestial sphere
lunar maps

astronomical models
UF *orreries*
GS models
. astronomical models
. . density wave model
. . stellar models
RT big bang cosmology
correlation
cosmology
mathematical models
molecular clouds
planetariums
Reissner–Nordstrom solution
solar neutrinos
solar oscillations
stellar oscillations

Astronomical Netherlands Satellite
UF *ANS*
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . Astronomical Netherlands Satellite
observatories
. astronomical observatories
. . astronomical satellites
. . . Astronomical Netherlands Satellite
RT Netherlands
Netherlands space program

astronomical observatories
GS observatories
. astronomical observatories
. . astronomical satellites
. . . Astronomical Netherlands Satellite
. . . Gamma Ray Observatory
. . . Ginga satellite
. . . HEAO
. . . . HEAO 1
. . . . HEAO 2
. . . . HEAO 3
. . . . HEAO 4
. . . Hubble Space Telescope
. . . Infrared Astronomy Satellite
. . . Infrared Space Observatory (ISO)
. . . IUE
. . . Large Deployable Reflector
. . . Magellan ultraviolet astronomy satellite
. . . OAO
. . . . OAO 1
. . . . OAO 2
. . . . OAO 3
. . . OSO
. . . . AOSO
. . . . OSO–1
. . . . OSO–2
. . . . OSO–3
. . . . OSO–4
. . . . OSO–5
. . . . OSO–6
. . . . OSO–7
. . . . OSO–8
. . . . OSO–C
. . . Quasat
. . . SAS
. . . . Explorer 53 satellite
. . . . SAS–1
. . . . SAS–2
. . . . SAS–3
. . . Space Infrared Telescope Facility
. . . Spartan satellites
. . . Tenma satellite
. . . X Ray Astrophysics Facility
. . Astroplane
. . ROSAT mission
. . SOFIA (airborne observatory)
. . solar observatories
. . . OSO
. . . . AOSO
. . . . OSO–1
. . . . OSO–2
. . . . OSO–3
. . . . OSO–4
. . . . OSO–5
. . . . OSO–6
. . . . OSO–7
. . . . OSO–8
. . . . OSO–C
. . . Pinhole Occulter Facility
. . European Southern Observatory
RT astrodynamics
astrolabes
astronomy
celestial bodies
geophysical observatories
honeycomb mirrors
Jodrell Bank Observatory
lunar observatories
northern sky
radio astronomy
seeing (astronomy)
segmented mirrors
Southern sky
spaceborne telescopes
telescopes

astronomical photography
GS imagery
. photography
. . astronomical photography
RT aerial photography
astrometry
astronomy
atmospheric windows
Baker–Nunn camera
black and white photography
coronagraphs
diffraction limited cameras
electro–optical photography
faint object camera
infrared astronomy
infrared photography
Lallemand cameras
lunar photographs
lunar photography
reference stars
rocket–borne photography
satellite–borne photography
Schmidt cameras
Southern sky
spaceborne photography
spaceborne telescopes

astronomical photometry
GS optical measurement
. photometry
. . astronomical photometry
. . . stellar spectrophotometry
RT atmospheric windows
blinking
cometary atmospheres
DIAL satellite
infrared photometry
spectrophotometry
telephotometry

astronomical polarimetry
(added July 1991)
DEF The measurement of electromagnetic radiation from celestial bodies by polarimeters.
GS optical measurement
. polarimetry
. . astronomical polarimetry
RT astrometry
astronomy
polarimeters

astronomical satellites
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . Astronomical Netherlands Satellite
. . . Gamma Ray Observatory
. . . Ginga satellite
. . . HEAO
. . . . HEAO 1
. . . . HEAO 2
. . . . HEAO 3
. . . . HEAO 4
. . . Hubble Space Telescope
. . . Infrared Astronomy Satellite
. . . Infrared Space Observatory (ISO)
. . . IUE
. . . Large Deployable Reflector
. . . Magellan ultraviolet astronomy satellite
. . . OAO
. . . . OAO 1
. . . . OAO 2
. . . . OAO 3
. . . OSO
. . . . AOSO
. . . . OSO–1
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. . . . OSO–7
. . . . OSO–8
. . . . OSO–C
. . . Quasat
. . . SAS
. . . . Explorer 53 satellite
. . . . SAS–1
. . . . SAS–2
. . . . SAS–3
. . . Space Infrared Telescope Facility
. . . Spartan satellites
. . . Tenma satellite
. . . X Ray Astrophysics Facility
observatories
. astronomical observatories
. . astronomical satellites
. . . Astronomical Netherlands Satellite
. . . Gamma Ray Observatory
. . . Ginga satellite
. . . HEAO
. . . . HEAO 1
. . . . HEAO 2
. . . . HEAO 3
. . . . HEAO 4
. . . Hubble Space Telescope
. . . Infrared Astronomy Satellite
. . . Infrared Space Observatory (ISO)
. . . IUE
. . . Large Deployable Reflector
. . . Magellan ultraviolet astronomy satellite
. . . OAO
. . . . OAO 1

. . . . OAO 2
. . . . OAO 3
. . . OSO
. . . . AOSO
. . . . OSO-1
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. . . . OSO-6
. . . . OSO-7
. . . . OSO-8
. . . . OSO-C
. . . Ouasat
. . . SAS
. . . . Explorer 53 satellite
. . . . SAS-1
. . . . SAS-2
. . . . SAS-3
. . . Space Infrared Telescope Facility
. . . Spartan satellites
. . . Tenma satellite
. . . X Ray Astrophysics Facility
RT ROSAT mission
spaceborne astronomy

astronomical spectroscopy
GS spectroscopy
. astronomical spectroscopy
. . stellar spectrophotometry
RT astronomy
continuous spectra
electromagnetic spectra
infrared spectroscopy
Kuiper Airborne Observatory
organic solids
radial velocity
radiation spectra
radio astronomy
radio spectroscopy
Raman spectroscopy
solar spectra
Southern sky
spectra
spectroscopic telescopes
stellar spectra
ultraviolet spectroscopy
visible spectrum
x ray spectroscopy

astronomical telescopes
USE **telescopes**

astronomy
DEF The science that treats of the location, magnitudes, motions, and constitution of celestial bodies and structures. Used for celestial observation.
UF *celestial observation*
GS **astronomy**
. gamma ray astronomy
. infrared astronomy
. radar astronomy
. radio astronomy
. spaceborne astronomy
. ultraviolet astronomy
. x ray astronomy
RT ∞ aerospace sciences
Amor asteroid
Apollo asteroids
astrolabes
astrometry
∞ astronautics
astronomical interferometry
astronomical observatories
astronomical photography
astronomical polarimetry
astronomical spectroscopy
astrophysics
celestial bodies
celestial mechanics
Earth limb
helios
infrared sources (astronomy)
infrared telescopes
mass to light ratios
meteoroid showers
missing mass (astrophysics)
∞ physical sciences
relic radiation
∞ science
seeing (astronomy)
selenology
sidereal time
sky surveys (astronomy)
solar neighborhood
solar parallax
Southern sky
spaceborne telescopes
stellar magnitude
stellar models
stellar oscillations
telescopes

astrophysics
DEF A branch of astronomy that treats of the physical properties of celestial bodies, such as luminosity, size, mass, density, temperature, and chemical composition. Used for geoastrophysics.
UF *geoastrophysics*
GS **astrophysics**
. computational astrophysics
. nuclear astrophysics
. stellar physics
. . solar physics
RT accretion disks
association reactions
astronomy
brightness distribution
brightness temperature
celestial bodies
celestial mechanics
cosmology
degenerate matter
dense plasmas
disk galaxies
galactic evolution
gamma ray astronomy
geophysics
grand unified theory
gravitational binding energy
gravitational collapse
gravitational instability
helioseismology
interstellar extinction
magnetic field configurations
mass to light ratios
Michelson interferometers
missing mass (astrophysics)
naked singularities
Orion nebula
∞ physics
planetary rotation
radio interferometers
radio jets (astronomy)
relic radiation
∞ science
solar neutrinos
Spartan satellites
spin temperature
star formation
stellar cores
stellar envelopes
stellar evolution
stellar interiors
stellar oscillations
theoretical physics
Wolf-Rayet stars
X Ray Astrophysics Facility
x ray binaries

Astroplane
SN (LIMITED TO THE EUROPEAN AIRBORNE ASTRONOMICAL OBSERVATORY)
GS observatories
. astronomical observatories
. . **Astroplane**
RT airborne equipment
infrared telescopes

asymmetrical optics
USE **aspheric optics**

asymmetry
UF *dissymmetry*
RT antisymmetry
deviation
distortion
eccentricity
shapes
skewness
symmetry
variations

asymptotes
GS analysis (mathematics)
. real variables
. . **asymptotes**
functions (mathematics)
. **asymptotes**
RT analytic geometry
asymptotic properties
asymptotic series
calculus
numerical analysis

asymptotic giant branch stars
UF *AGB stars*
GS celestial bodies
. stars
. . giant stars
. . . **asymptotic giant branch stars**
RT carbon stars
color-magnitude diagram
Hertzsprung-Russell diagram
late stars
M stars
Mira variables
red giant stars
S stars
stellar evolution
stellar mass ejection

asymptotic methods
GS problem solving
. **asymptotic methods**
RT asymptotic properties
iterative solution
learning curves
∞ methodology

asymptotic properties
DEF Properties of any mathematical relation or corresponding physical system characterized by an approach to a given value as an expression, containing a variable, tends to infinity.
RT asymptotes
asymptotic methods
asymptotic series
attractors (mathematics)
differential equations
integral equations

mathematical models
normality

asymptotic series
GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . asymptotic series
. real variables
. . series (mathematics)
. . . asymptotic series
RT asymptotes
asymptotic properties
series expansion

asynchronous motors
GS motors
. electric motors
. . asynchronous motors
RT induction motors
synchronous motors

asynchronous transfer mode
(added January 1997)
UF *ATM (data transmission)*
RT broadband
channels (data transmission)
communication networks
data transfer (computers)
data transmission
optical switching
packet switching
packet transmission

ATARS
USE automatic traffic advisory and resolution

ataxia
GS diseases
. ataxia
RT muscles

ataxite
GS rocks
. ataxite
RT breccia
soils

Atchafalaya River Basin (LA)
GS landforms
. structural basins
. . river basins
. . . Atchafalaya River Basin (LA)
RT Louisiana
rivers

atelectasis
DEF Collapsed or airless state of all or part of the lung.
GS diseases
. atelectasis
RT lungs

ATF
USE F-22 aircraft

Athena rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . Athena rocket vehicle
RT BE-3 engine
reentry vehicles
solid propellant rocket engines

atherosclerosis
USE arteriosclerosis

athletes
RT competition
physical exercise
physical fitness
sports medicine

athodyds
USE ramjet engines

Atlanta (GA)
GS cities
. Atlanta (GA)
RT Georgia

Atlantic aircraft
USE Breguet 1150 aircraft

Atlantic Ocean
GS oceans
. Atlantic Ocean
RT Assateague Island (MD-VA)
Azores
Bermuda
Block Island Sound (RI)
Cape Hatteras (NC)
Cape Verde
Delaware Bay (US)
English Channel
GARP Atlantic Tropical Experiment
Gulf Stream
Lesser Antilles
Lomonosov current
Long Island (NY)
mid-ocean ridges
Outer Banks (NC)
Sargasso Sea
Wallops Island
West Indies

Atlantis (orbiter)
UF *Space Shuttle Orbiter 104*
GS manned spacecraft
. space shuttles
. . Space Shuttle orbiters
. . . Atlantis (orbiter)
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . space shuttles
. . . . Space Shuttle orbiters
. . . . . Atlantis (orbiter)
RT manned space flight
Space Shuttle mission 51-H
Space Shuttle mission 51-J
Space Shuttle mission 61-B
∞ spacecraft

Atlas Able 5 launch vehicle
GS launch vehicles
. Atlas launch vehicles
. . Atlas Able 5 launch vehicle
rocket vehicles
. multistage rocket vehicles
. . Atlas launch vehicles
. . . Atlas Able 5 launch vehicle
RT lunar probes
space probes

Atlas Agena B launch vehicle
GS launch vehicles
. Atlas launch vehicles
. . Atlas Agena B launch vehicle
rocket vehicles
. multistage rocket vehicles
. . Atlas launch vehicles
. . . Atlas Agena B launch vehicle
RT Agena rocket vehicles
Mariner 2 space probe
Midas satellites
Ranger 4 lunar probe
Ranger lunar probes

Atlas Agena launch vehicles
GS launch vehicles
. Atlas launch vehicles
. . Atlas Agena launch vehicles
rocket vehicles
. multistage rocket vehicles
. . Atlas launch vehicles
. . . Atlas Agena launch vehicles
RT Agena rocket vehicles
Environmental Research Satellites
ERS 17
ERS 18
Mariner 5 space probe
Mariner 6 space probe
Mariner program
OGO-A
∞ vehicles

Atlas Centaur launch vehicle
GS launch vehicles
. Atlas launch vehicles
. . Atlas Centaur launch vehicle
. Centaur launch vehicle
. . Atlas Centaur launch vehicle
rocket vehicles
. Centaur launch vehicle
. . Atlas Centaur launch vehicle
. multistage rocket vehicles
. . Atlas launch vehicles
. . . Atlas Centaur launch vehicle
RT Centaur project
OAO 1
OAO 2
OAO 3
RL-10 engines
Space Shuttle upper stage A
Surveyor 1 lunar probe
Surveyor 2 lunar probe
Surveyor 3 lunar probe
Surveyor 4 lunar probe
Surveyor 5 lunar probe
Surveyor 6 lunar probe
Surveyor 7 lunar probe
Surveyor project

Atlas D ICBM
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . Atlas D ICBM
. surface to surface missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . Atlas D ICBM
RT Centaur launch vehicle
Standard Launch Vehicles
Vega launch vehicle

Atlas E ICBM
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . Atlas E ICBM
. surface to surface missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . Atlas E ICBM

Atlas F ICBM
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . Atlas F ICBM

. surface to surface missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . Atlas F ICBM

Atlas ICBM
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
. surface to surface missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
RT MA-2 engine
MA-3 engine

Atlas launch vehicles
UF *SM-65 missile*
GS launch vehicles
. Atlas launch vehicles
. . Atlas Able 5 launch vehicle
. . Atlas Agena B launch vehicle
. . Atlas Agena launch vehicles
. . Atlas Centaur launch vehicle
. . Atlas SLV-3 launch vehicle
rocket vehicles
. multistage rocket vehicles
. . Atlas launch vehicles
. . . Atlas Able 5 launch vehicle
. . . Atlas Agena B launch vehicle
. . . Atlas Agena launch vehicles
. . . Atlas Centaur launch vehicle
. . . Atlas SLV-3 launch vehicle
RT EGO
Gemini project
MA-5 engine
Mariner program
Mercury flights
Mercury MA-1 flight
Mercury MA-2 flight
Mercury MA-3 flight
Mercury MA-4 flight
Mercury MA-5 flight
Mercury MA-6 flight
Mercury MA-7 flight
Mercury MA-8 flight
Mercury MA-9 flight
Mercury project
Nomad launch vehicle
OAO
orbital rendezvous
Ranger project
∞ vehicles

Atlas SLV-3 launch vehicle
UF *standard launch vehicle 3*
GS launch vehicles
. Atlas launch vehicles
. . Atlas SLV-3 launch vehicle
. Standard Launch Vehicles
. . Atlas SLV-3 launch vehicle
rocket vehicles
. multistage rocket vehicles
. . Atlas launch vehicles
. . . Atlas SLV-3 launch vehicle
. Standard Launch Vehicles
. . Atlas SLV-3 launch vehicle
RT liquid propellant rocket engines
MA-5 engine

ATLIT project
UF *Advanced Technology Light Twin aircraft*
GS programs
. NASA programs
. . ATLIT project
. projects
. . ATLIT project
RT ∞ aircraft
GAW-1 airfoil
PA-34 Seneca aircraft

ATM (data transmission)
USE asynchronous transfer mode

Atmosphere Explorer A
USE Explorer 17 satellite

Atmosphere Explorer B
USE Explorer 32 satellite

Atmosphere Explorer C
USE Explorer 51 satellite

Atmosphere Explorer D
USE Explorer 54 satellite

Atmosphere Explorer E
USE Explorer 55 satellite

∞ atmospheres
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF (1) The mixture of gases surrounding the Earth or filling the habitable volume of a spacecraft. (2) The pressure exerted by a column of mercury 760 mm high at 1G, equal to 101.329 kilopascals.
RT air
argon-oxygen atmospheres
atmospheric pressure
cabin atmospheres
cometary atmospheres
controlled atmospheres
Earth atmosphere
environments
equatorial atmosphere
gas mixtures
gases
helium-oxygen atmospheres
hypobaric atmospheres
life support systems
meteorology
middle atmosphere
Neptune atmosphere
neutral atmospheres
nongray atmospheres
nongray gas
planetary atmospheres
planetary ionospheres
primitive Earth atmosphere
satellite atmospheres
solar atmosphere
stellar atmospheres
Uranus atmosphere

Atmospheric & Oceanographic Inform Sys
SN (ATMOSPHERIC & OCEANOGRAPHIC INFORMATION SYSTEMS)
DEF A data system designed primarily for the interactive manipulation of meteorological satellite images. Capabilities include displaying, analyzing, storing, and manipulating digital data in the field of meteorology and Earth resources. Used for AOIPS.
UF *AOIPS*
GS information systems
. Atmospheric & Oceanographic Inform Sys
RT aerology
air water interactions
data processing
data systems
imagery
isotherms
meteorological parameters
meteorology
minicomputers
oceanographic parameters
oceanography
∞ systems
weather

atmospheric absorption
USE atmospheric attenuation

Atmospheric and Magnetospheric Payload
USE AMPS (satellite payload)

atmospheric attenuation
UF *atmospheric absorption*
GS attenuation
. atmospheric attenuation
. . aurorai absorption
RT acoustic attenuation
atmospheric lasers
cosmic ray albedo
electromagnetic absorption
electromagnetic scattering
electromagnetic wave transmission
infrared absorption
microwave absorption
molecular absorption
planetary atmospheres
radar attenuation
radar transmission
radiation absorption
radio attenuation
radio transmission
shock wave attenuation
shock wave propagation
thermal absorption
transmission
vegetative index
wave attenuation
wave propagation

atmospheric boundary layer
GS boundary layers
. atmospheric boundary layer
RT air flow
air land interactions
boundary layer flow
Ekman layer
∞ layers
mixing layers (fluids)
planetary boundary layer
primitive equations

atmospheric chemistry
DEF Study of the production, transport, modification, and removal of atmospheric constituents in the troposphere and stratosphere.
GS environmental chemistry
. atmospheric chemistry
RT acid rain
aeronomochemistry
air pollution
Aitken nuclei
atmospheric effects
∞ chemistry
formyl ions
middle atmosphere
nitrous acid
photochemical oxidants

photochemical reactions
physical chemistry
satellite atmospheres

atmospheric circulation
DEF Global or hemispheric air movements which can be treated by equations of motion in contrast to atmospheric diffusion which is small random movement not amenable to treatment by these equations. Used for wind circulation.
UF *wind circulation*
GS circulation
. **atmospheric circulation**
. . zonal flow (meteorology)
RT advection
air currents
air land interactions
air masses
annual variations
Atmospheric General Circulation Experiment
Atmospheric General Circulation Models
baroclinic instability
Brunt-Vaisala frequency
circulation distribution
circumpolar westerlies
climatology
convection cells
cyclogenesis
Earth atmosphere
ground wind
horizontal distribution
intertropical convergent zones
jet streams (meteorology)
Kelvin waves
meridional flow
middle atmosphere
mixing height
monsoons
planetary meteorology
planetary waves
pollution transport
sea breeze
Southern oscillation
superrotation
tornadoes
tropical storms
turbopause
typhoons
upwelling water
vertical air currents
vorticity
wind (meteorology)
wind direction
wind profiles
windpower utilization

Atmospheric Cloud Physics Lab (Spacelab)
DEF A NASA Spacelab mission involving cloud physics experiments in zero gravity environment. Also known as ACPL. Used for ACPL (Spacelab) and zero-g ACPL (Spacelab).
UF *ACPL (Spacelab)*
zero-g ACPL (Spacelab)
GS laboratories
. space laboratories
. . **Atmospheric Cloud Physics Lab (Spacelab)**
payloads
. Spacelab payloads
. . **Atmospheric Cloud Physics Lab (Spacelab)**
RT cloud physics
meteorological parameters
nephanalysis
spacecraft instruments

atmospheric composition
GS composition (property)
. **atmospheric composition**
. . atmospheric moisture
. . ionospheric composition
RT aeronomy
air
air pollution
Aitken nuclei
carbon dioxide concentration
chemical composition
climate change
Earth atmosphere
electron density (concentration)
equatorial atmosphere
Gaia hypothesis
gas composition
horizontal distribution
in situ measurement
isotope ratios
LACATE (experiment)
middle atmosphere
mixing ratios
moisture content
ozone depletion
particulates
planetary atmospheres
primitive Earth atmosphere
radio occultation
radioactive contaminants
satellite atmospheres
Saturn atmosphere
Solar Mesosphere Explorer
Titan

atmospheric conditions
USE **meteorology**

atmospheric conductivity
GS transport properties
. **atmospheric conductivity**
. . ionospheric conductivity
RT air conductivity
∞ conductivity
electrical resistivity
thermal conductivity

atmospheric correction
DEF Removal of the effects of the intervening atmosphere from satellite imagery.
GS correction
. **atmospheric correction**
RT atmospheric effects
clouds (meteorology)
geometric rectification (imagery)
image classification
image processing
infrared radiometers
radiative transfer
satellite imagery
spatial resolution

atmospheric density
GS density (mass/volume)
. **atmospheric density**
RT air pollution
Boltzmann distribution
∞ density
density (number/volume)
electron density (concentration)
humidity
ion density (concentration)
magnetospheric electron density
magnetospheric ion density
magnetospheric proton density
meteorology
particle density (concentration)
planetary atmospheres
plasma density
proton density (concentration)
space density

atmospheric diffusion
GS diffusion
. **atmospheric diffusion**
RT Boltzmann distribution
molecular diffusion
pollution transport
radio scattering
turbulent diffusion

atmospheric effects
RT aerosols
air pollution
atmospheric chemistry
atmospheric correction
∞ effects
erosion
exposure
rusting
seeing (astronomy)
soil erosion
turbulence
vegetative index
wind effects
wind erosion

atmospheric electricity
DEF Electrical phenomena, regarded collectively, which occur in the Earth's atmosphere. Also the study of electrical processes occurring within the atmosphere.
GS electricity
. **atmospheric electricity**
. . ionospheric currents
. . . Birkeland currents
. . . electrojets
. . . . auroral electrojets
. . . . equatorial electrojet
RT atmospherics
ball lightning
cloud physics
dust storms
Earth atmosphere
electric corona
electron density profiles
field aligned currents
lightning
lightning suppression
primitive Earth atmosphere
ring currents
static electricity
telluric currents

atmospheric emission
USE **airglow**

atmospheric energy sources
RT ammonia
∞ energy sources
energy technology
ethyl alcohol

atmospheric entry
DEF The penetration of any planetary atmosphere by any object from outer space; specifically, the penetration of the Earth's atmosphere by a manned or unmanned capsule or spacecraft. Used for planetary entry.
UF *planetary entry*
GS **atmospheric entry**
. reentry
. . hyperbolic reentry
. . hypersonic reentry
. . . uncontrolled reentry (spacecraft)

. . manned reentry
. . spacecraft reentry
. . . uncontrolled reentry (spacecraft)
RT ablation
aerocapture
aerodynamic heating
aeromaneuvering
bolides
descent trajectories
Earth atmosphere
∞ entry
entry guidance (STS)
failing
Galileo project
gas guns
orbit decay
space flight
spacecraft breakup

atmospheric entry simulation
GS simulation
. **atmospheric entry simulation**
RT environment simulation
flight simulators
landing simulation
space environment simulation

Atmospheric General Circulation Experiment
DEF Model experiment of the Earth's atmospheric circulation as proposed for a Spacelab flight on which a liquid contained between two concentric spheres is subjected to rotation. The thermal driving force will be a stable radial temperature gradient and an unstable latitudinal gradient.
GS payloads
. Space Shuttle payloads
. . **Atmospheric General Circulation Experiment**
. Spacelab payloads
. . **Atmospheric General Circulation Experiment**
RT atmospheric circulation
Atmospheric General Circulation Models
Earth atmosphere
space transportation system

Atmospheric General Circulation Models
(added March 1989)
GS models
. atmospheric models
. . **Atmospheric General Circulation Models**
RT atmospheric circulation
Atmospheric General Circulation Experiment
climatology
long range weather forecasting
numerical weather forecasting

atmospheric heat budget
GS energy budgets
. heat budget
. . **atmospheric heat budget**
RT Earth radiation budget
greenhouse effect
heat balance
heat transfer
stratospheric warming

atmospheric heating
SN (EXCLUDES AERODYNAMIC HEATING)
GS heating
. **atmospheric heating**
. . global warming
. . stratospheric warming
RT bolides

atmospheric impurities
USE **air pollution**

atmospheric ionization
UF *meteoritic ionization*
GS ionization
. gas ionization
. . **atmospheric ionization**
. . . auroral ionization
RT afterglows
airglow
Antares rocket vehicle
Earth ionosphere
electron density profiles
photoionization
plasmasphere
radio meteors
riometers

atmospheric lasers
DEF The theoretical phenomena whereby the upper atmosphere is used as the lasing medium.
GS stimulated emission devices
. **lasers**
. . **atmospheric lasers**
RT atmospheric attenuation
atmospheric optics
atmospheric scattering
laser outputs
TEA lasers

atmospheric loading
USE **pollution transport**

atmospheric models
GS models
. **atmospheric models**
. . Atmospheric General Circulation Models
. . reference atmospheres
RT baroclinic instability
Chapman–Ferraro problem
climate models
environment models
environment simulation
horizontal distribution
large eddy simulation
mathematical models
numerical weather forecasting
ocean models
primitive Earth atmosphere
solar oscillations
stellar oscillations
Venus clouds
weather forecasting

atmospheric moisture
GS composition (property)
. atmospheric composition
. . **atmospheric moisture**
. concentration (composition)
. . moisture content
. . . **atmospheric moisture**
moisture
. **atmospheric moisture**
RT acid rain
Advanced Microwave Sounding Unit
anvil clouds
cap clouds
cirrocumulus clouds
cirrostratus clouds
clouds (meteorology)
dew point
humidity
hydrometeors
mixing ratios
precipitation (meteorology)
psychrometers
water vapor

atmospheric noise
USE **atmospherics**

atmospheric optics
DEF The study of the optical characteristics of the atmosphere and of the optical phenomena produced by the atmosphere's suspensoids and hydrometeors. It embraces the study of refraction, reflection, diffraction, scattering, and polarization of light, but is not commonly regarded as including the study of any other kinds of radiation.
RT adaptive optics
atmospheric lasers
clarity
haze
infrared absorption
light transmission
opacity
∞ optics
seeing (astronomy)
transparence
vegetative index

atmospheric physics
UF *aerophysics*
GS **atmospheric physics**
. cloud physics
RT aeronomy
Brunt–Vaisala frequency
dust storms
Earth sciences
International Magnetospheric Study
magnetosphere–ionosphere coupling
meteorology
neutral sheets
∞ physics
planetary meteorology
satellite atmospheres
∞ science
secular variations
turbopause

atmospheric pressure
DEF The pressure at any point in an atmosphere due solely to the weight of the atmospheric gases above the point concerned. Used for barometric pressure.
UF *barometric pressure*
GS pressure
. **atmospheric pressure**
RT anticyclones
∞ atmospheres
cyclogenesis
cyclones
gas pressure
geopotential height
high altitude pressure
isobars (pressure)
isostatic pressure
meteorological parameters
pressure gradients
radio occultation
Southern oscillation
weather

atmospheric radiation
DEF Infrared radiation emitted by or being propagated through the atmosphere.
GS **atmospheric radiation**
. auroras
. . auroral arcs
. . . red arcs
. . radio auroras

. dawn chorus
. ionospheric noise
. . whistlers
. sky radiation
. . airglow
. . . geocoronal emissions
. . . nightglow
. . . twilight glow
. . dayglow
. stratosphere radiation
. tropospheric radiation
RT corpuscular radiation
Earth radiation budget
electromagnetic radiation
extraterrestrial radiation
greenhouse effect
ionospheric heating
light (visible radiation)
∞ radiation
∞ rays
secondary cosmic rays
terrestrial radiation
VLF emission recorders

atmospheric refraction
DEF Refraction resulting when a ray of radiant energy passes obliquely through an atmosphere.
GS refraction
. atmospheric refraction
. . radio wave refraction
RT electromagnetic radiation
light transmission
refractivity
solar radiation
wave dispersion

atmospheric scattering
GS scattering
. wave scattering
. . atmospheric scattering
. . . tropospheric scattering
RT atmospheric lasers
circumsolar radiation
diffraction
diffusion
electromagnetic scattering
halos
light scattering
microwave scattering
radio scattering
signal fading
vegetative index

atmospheric seeing
USE seeing (astronomy)

atmospheric shells
USE atmospheric stratification

atmospheric sounding
DEF Measurement of atmospheric phenomena generally with instruments carried aloft by spacecraft, rockets, etc.
GS sounding
. atmospheric sounding
RT Advanced Microwave Sounding Unit
balloon sounding
differential absorption lidar
in situ measurement
ionospheric sounding
rocket sounding
satellite sounding
visible infrared spin scan radiometer

atmospheric stratification
DEF The presence of strata or layers in the Earth's atmosphere. Used for atmospheric shells.
UF atmospheric shells
GS stratification
. atmospheric stratification
RT Brunt-Vaisala frequency
mixing layers (fluids)
plasma layers
surface layers

atmospheric temperature
GS temperature
. atmospheric temperature
. . auroral temperature
. . ionospheric temperature
RT Advanced Microwave Sounding Unit
ambient temperature
climate change
Gaia hypothesis
gas temperature
global warming
isotherms
LACATE (experiment)
land surface temperature
meteorological parameters
planetary atmospheres
planetary temperature
radio occultation
sodar
sound detecting and ranging
stratospheric warming
subzero temperature
temperature gradients
temperature inversions
thermal resources
weather

atmospheric tides
DEF Defined in analogy to the oceanic tide as an atmospheric motion on a worldwide scale, in which vertical accelerations are neglected (but compressibility is taken into account).
GS tides
. atmospheric tides
RT Earth tides
lunar tides

atmospheric turbulence
GS turbulence
. atmospheric turbulence
. . clear air turbulence
. . gusts
. . low level turbulence
RT aviation meteorology
dissipation
gust loads
homogeneous turbulence
isotropic turbulence
laminar flow
meteorological parameters
meteorology
seeing (astronomy)
tephigrams
turbopause
turbulent diffusion
turbulent flow
wind variations

atmospheric windows
DEF Wavelength intervals at which the atmosphere transmits the most electromagnetic radiation.
RT astronomical photography
astronomical photometry

atmospherics
DEF The radiofrequency electromagnetic radiations originating, principally, in the irregular surges of charge in thunderstorm lightning discharges. Atmospherics are heard as a quasi-steady background of crackling noise (static) in ordinary amplitude modulated radio receivers. Used for atmospheric noise and sferics.
UF atmospheric noise
sferics
GS electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . atmospherics
. . . . ionospherics
. . . . . dawn chorus
. . . . . hiss
. . . . sudden enhancement of atmospherics
. . . . whistlers
RT atmospheric electricity
blackout (propagation)
electromagnetic compatibility
radio meteorology
radio waves
static electricity
thunderstorms
VLF emission recorders

atoll reefs
USE coral reefs

atolls
DEF Coral reefs appearing in plan view as roughly circular (though sometimes elliptical or horseshoe-shaped), and surmounted by a chain or ring of closely spaced low coral islets that encircle a shallow lagoon in which there is no pre-existing land or islands of non-coral origin; the reefs are surrounded by deep water of the open sea, either oceanic or continental shelves. Atolls range in diameter from 1 km to more than 130 km, and are especially common today in the western and central Pacific Ocean. Atoll is derived from the native name in the Maldive Islands (Indian Ocean) which are typical examples of this structure.
GS landforms
. islands
. . atolls
RT coral reefs
lagoons
reefs

atom concentration
GS composition (property)
. concentration (composition)
. . atom concentration
RT chemical composition
∞ density
electron density (concentration)
flux density
gas composition
gas density
ion density (concentration)
ionospheric composition
plasma composition
plasma density
proton density (concentration)

atomic batteries
USE radioisotope batteries

atomic beams
GS beams (radiation)
. particle beams
. . atomic beams
RT ion beams

molecular beams
neutral atoms
neutral beams
neutron beams
particle diffusion
rarefied gas dynamics

atomic bombs
USE **fission weapons**

atomic clocks
DEF Timekeeping devices controlled by the frequency of the natural vibrations of certain atoms.
GS measuring instruments
. time measuring instruments
. . clocks
. . . **atomic clocks**
RT autonomous spacecraft clocks
chronometers
clock paradox
frequency standards
gas masers
masers
molecular beams
time measurement

atomic clusters
(added January 1994)
RT agglomeration
chemisorption
clumps
∞ clusters
fullerenes
metal clusters
molecular clusters
nucleation

atomic collisions
GS atomic interactions
. **atomic collisions**
collisions
. **atomic collisions**
RT ∞ absorption
atomizing
autoionization
∞ cross sections
elastic scattering
electron scattering
∞ interactions
ionic collisions
ionization
molecular collisions
particle collisions
recoil ions
recombination reactions
scattering

atomic energy
USE **nuclear energy**

atomic energy levels
UF *triplet excitation*
triplet state
GS level (quantity)
. energy levels
. . **atomic energy levels**
RT atomic interactions
excitation
ground state
Landau factor
laser cooling
line spectra
spontaneous emission

atomic excitations
GS excitation
. **atomic excitations**
RT energy levels
Heisenberg theory
ionization
molecular excitation
particle collisions
resonance fluorescence

atomic explosions
USE **nuclear explosions**

atomic force microscopy
(added February 1994)
DEF A form of microscopy that allows the imaging of general surface morphology and surface atomic structure by the measurement of the atomic forces acting on a sharply pointed probe as it is moved across the surface of a specimen.
UF *AFM (microscopy)*
GS microscopy
. **atomic force microscopy**
RT atomic structure
crystal surfaces
interatomic forces
microstructure
surface properties
thin films

atomic gases
USE **monatomic gases**

atomic interactions
GS **atomic interactions**
. atomic collisions
RT atomic energy levels
∞ interactions
ion atom interactions
molecular structure
quantum mechanics

atomic layer epitaxy
(added June 1997)
GS growth
. crystal growth
. . epitaxy
. . . **atomic layer epitaxy**
RT molecular beam epitaxy
thin films
vapor deposition
vapor phase epitaxy

atomic mass
USE **atomic weights**

atomic mobilities
GS mobility
. **atomic mobilities**
RT electron mobility
hole mobility
ionic mobility
self diffusion (solid state)

atomic physics
RT Hartree–Fock–Slater method
∞ physics
resonance fluorescence
∞ science

atomic recombination
GS chemical reactions
. **atomic recombination**
. . oxygen recombination
recombination reactions
. **atomic recombination**
. . oxygen recombination
RT deionization
dissociation
emission
emission spectra
ion recombination
radiative recombination

atomic spectra
GS spectra
. **atomic spectra**
RT Balmer series
Lyman alpha radiation
Lyman beta radiation
Lyman spectra
Paschen series
Rydberg series

atomic structure
UF *electronic structure*
RT atomic force microscopy
atoms
constitution
crystal lattices
elementary particles
energy levels
fine structure
gravitons
Hartree approximation
hyperfine structure
interatomic forces
isoelectronic sequence
melts (crystal growth)
molecular structure
nuclear chemistry
nuclear models
nuclear physics
octets
order–disorder transformations
particle precipitation
Pauli exclusion principle
polywater
∞ structures
Thomas–Fermi model

atomic theory
GS **atomic theory**
. Heisenberg theory
RT electron transitions
ground state
Landau factor
∞ nuclear energy
quantum theory
∞ theories

atomic weights
DEF The weight of an atom according to a scale of atomic weight units, awu, valued as one-twelfth the mass of the carbon atom. Used for atomic mass.
UF *atomic mass*
GS weight (mass)
. **atomic weights**
RT ∞ weight

atomization
USE **atomizing**

atomizers
RT atomizing
evaporators
grinding mills
∞ nozzles
sprayers

atomizing
UF *atomization*
GS **atomizing**
. gas atomization
. liquid atomization
RT aerosols
atomic collisions

atomizers
colloidal generators
colliding
comminution
disintegration
flaking
grinding (comminution)
grinding mills
metal powder
spraying

atoms
GS atoms
. helium atoms
. hot atoms
. hydrogen atoms
. metastable atoms
. neutral atoms
. nitrogen atoms
. oxygen atoms
. recoil atoms
RT atomic structure
chemical elements
∞ elements
free radicals
ions
isomers
isotope separation
isotopes
molecules
monatomic molecules
nuclei (nuclear physics)
polyatomic molecules
positive ions
positronium

ATP
USE adenosine triphosphate

ATR reactor
USE advanced test reactors

ATR-72 aircraft
(added September 1994)
GS jet aircraft
. turboprop aircraft
. . ATR-72 aircraft
passenger aircraft
. commuter aircraft
. . ATR-72 aircraft
RT ∞ aircraft

atrophy
RT biological effects
degeneration
deterioration
nutritional requirements
physical exercise
tissues (biology)

atropine
GS bases (chemical)
. alkaloids
. . atropine
drugs
. stimulants
. . atropine
nitrogen compounds
. alkaloids
. . atropine
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . alkaloids
. . . . atropine

ATS
UF *Applications Technology Satellites*
GS artificial satellites
. gravity gradient satellites
. . ATS
. . . ATS 1
. . . ATS 2
. . . ATS 3
. . . ATS 4
. . . ATS 5
. . . ATS 6
. . . ATS 7
. . . ATS 8
. scientific satellites
. . ATS
. . . ATS 1
. . . ATS 2
. . . ATS 3
. . . ATS 4
. . . ATS 5
. . . ATS 6
. . . ATS 7
. . . ATS 8
RT communication satellites
Early Bird satellites
meteorological satellites
navigation satellites
NAVSTAR satellites

ATS 1
GS artificial satellites
. gravity gradient satellites
. . ATS
. . . ATS 1
. scientific satellites
. . ATS
. . . ATS 1

ATS 2
GS artificial satellites
. gravity gradient satellites
. . ATS
. . . ATS 2
. scientific satellites
. . ATS
. . . ATS 2

ATS 3
GS artificial satellites
. gravity gradient satellites
. . ATS
. . . ATS 3
. scientific satellites
. . ATS
. . . ATS 3

ATS 4
GS artificial satellites
. gravity gradient satellites
. . ATS
. . . ATS 4
. scientific satellites
. . ATS
. . . ATS 4

ATS 5
GS artificial satellites
. gravity gradient satellites
. . ATS
. . . ATS 5
. scientific satellites
. . ATS
. . . ATS 5

ATS 6
GS artificial satellites
. gravity gradient satellites
. . ATS
. . . ATS 6
. scientific satellites
. . ATS
. . . ATS 6
RT HET experiment

ATS 7
GS artificial satellites
. gravity gradient satellites
. . ATS
. . . ATS 7
. scientific satellites
. . ATS
. . . ATS 7

ATS 8
GS artificial satellites
. gravity gradient satellites
. . ATS
. . . ATS 8
. scientific satellites
. . ATS
. . . ATS 8

∞ attachment
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *reattachment*
RT assembling
Coanda effect
electron attachment
mounting
reattached flow

attachments
USE accessories

∞ attack
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT angle of attack
attacking (assaulting)
chemical attack

attack aircraft
GS attack aircraft
. A-1 aircraft
. A-7 aircraft
. A-9 aircraft
. A-10 aircraft
. A-37 aircraft
. AH-1G helicopter
. AH-63 helicopter
. AH-64 helicopter
. bomber aircraft
. . A-2 aircraft
. . A-3 aircraft
. . A-4 aircraft
. . A-5 aircraft
. . A-6 aircraft
. . B-1 aircraft
. . B-2 aircraft
. . B-26 aircraft
. . B-47 aircraft
. . B-50 aircraft
. . B-52 aircraft
. . B-57 aircraft
. . B-58 aircraft
. . B-66 aircraft
. . B-70 aircraft
. . F-111 aircraft
. . Shackleton bomber
. . Valiant aircraft
. . Victor MK-1 aircraft
. . Vulcan aircraft
. Breguet 1150 aircraft
. Buccaneer aircraft

. CL-41 aircraft
. COIN aircraft
. . F-5 aircraft
. . OV-10 aircraft
. DH 115 aircraft
. fighter aircraft
. . Alpha jet aircraft
. . DH 112 aircraft
. . F-2 aircraft
. . F-4 aircraft
. . F-5 aircraft
. . F-8 aircraft
. . F-9 aircraft
. . F-14 aircraft
. . F-15 aircraft
. . F-16 aircraft
. . F-17 aircraft
. . F-18 aircraft
. . F-20 aircraft
. . F-22 aircraft
. . F-84 aircraft
. . F-86 aircraft
. . F-89 aircraft
. . F-94 aircraft
. . F-100 aircraft
. . F-101 aircraft
. . F-102 aircraft
. . F-104 aircraft
. . F-105 aircraft
. . F-106 aircraft
. . F-117A aircraft
. . FV-12A aircraft
. . G-91 aircraft
. . G-95/4 aircraft
. . GA-5 aircraft
. . Harrier aircraft
. . Jaguar aircraft
. . JAS-39 aircraft
. . jet provost aircraft
. . MiG aircraft
. . Mirage aircraft
. . . Mirage 3 aircraft
. . P-51 aircraft
. . P-1127 aircraft
. . P-1154 aircraft
. . Saab 37 aircraft
. . Scimitar aircraft
. . Vampire MK 35 aircraft
. . YF-12 aircraft
. AH-1S helicopter
. AH-1W helicopter
. P-308 aircraft
. T-2 aircraft
. TSR-2 aircraft
RT aeroquatic vehicles
∞ aircraft
antisubmarine warfare aircraft
jet aircraft
∞ military aircraft
military helicopters
MRCA aircraft
supersonic aircraft
terrain following
V/STOL aircraft

attacking (assaulting)
UF *assaulting*
GS violence
. **attacking (assaulting)**
RT ∞ attack
∞ military aircraft
tactics
warfare

attention
RT alertness
consciousness

attenuation
DEF Reducing in intensity.
GS **attenuation**
. atmospheric attenuation
. . auroral absorption
. microwave attenuation
. sidelobe reduction
. wave attenuation
. . acoustic attenuation
. . . shock wave attenuation
. . radar attenuation
. . radio attenuation
RT ∞ absorption
attenuators
∞ conduction
damping
diffraction
dilution
dissipation
electromagnetic absorption
electromagnetic wave transmission
elimination
fading
impingement
∞ inhibition
internal friction
light (visible radiation)
mechanical impedance
∞ propagation
∞ reduction
retarding
shielding
signal fading
signal to noise ratios
sound propagation
sound transmission
spatial filtering
transmission
transmission loss
transmitters
vibration damping
wave degradation
wave diffraction
wave dispersion
wave propagation

attenuation coefficients
DEF A measure of the space rate of attenuation of any transmitted electromagnetic radiation.
GS coefficients
. **attenuation coefficients**
RT diffusion coefficient
flow coefficients
impedance
opacity
reflectance
scattering coefficients
transmission efficiency
transmittance

attenuators
DEF Devices for measuring attenuation. They are usually calibrated in dB (decibels).
GS **attenuators**
. resistors
. . potentiometers (resistors)
. . printed resistors
. . thermistors
RT ∞ absorbers
absorbers (materials)
attenuation
baffles
deflectors
∞ diffusers
electromagnetic wave filters
equalizers (circuits)
∞ filters
insulators
inverters
isolators
mufflers
power limiters
radiation shielding
reflectors
shielding
silencers
suppressors

attitude (inclination)
DEF The position or orientation of an aircraft, spacecraft, etc., either in motion or at rest, as determined by the relationship between its axes and some reference line or plane or some fixed system of reference axes. Used for spatial orientation, tilt, and tilting.
UF *spatial orientation*
tilt
tilting
GS **attitude (inclination)**
. pitch (inclination)
. roll
. satellite orientation
. yaw
RT horizontal orientation
instrument orientation
misalignment
∞ motion
∞ orientation
∞ position
∞ space orientation
stability augmentation
tiltmeters
vertical orientation

attitude control
DEF The regulation of the attitude of an aircraft, spacecraft, etc. Also a device or system that automatically regulates and corrects attitude, especially of a pilotless vehicle.
GS **attitude control**
. directional control
. . thrust vector control
. lateral control
. longitudinal control
. satellite attitude control
RT air traffic control
aircraft control
automatic control
cold gas
∞ control
control moment gyroscopes
flight control
guidance sensors
helicopter control
horizon scanners
magnetic control
manual control
Miranda satellite
missile control
orbital lifetime
reaction wheels
remote control
rocket engine control
satellite control
solar sensors
spacecraft control
spacing
spin stabilization
star trackers
thrust control
trajectory control
visual control

attitude gyros
DEF Gyro-operated flight instruments that indicate the attitude of an aircraft or spacecraft with respect to a reference coordinate system throughout 360 degrees of rotation about each axis of the craft.
GS gyroscopes
. **attitude gyros**
. . gyro horizons
RT control moment gyroscopes
sea keeping

attitude indicators
UF *helicopter attitude indicators*
yawmeters
GS flight instruments
. **attitude indicators**
. . gyro horizons
measuring instruments
. indicating instruments
. . **attitude indicators**
. . . gyro horizons
navigation aids
. navigation instruments
. . **attitude indicators**
. . . gyro horizons
RT aircraft instruments
control moment gyroscopes
flight control

attitude stability
UF *satellite attitude disturbance*
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . **attitude stability**
. . . . directional stability
. . . . . gyroscopic stability
. . . . lateral stability
. . . . longitudinal stability
stability
. dynamic stability
. . motion stability
. . . **attitude stability**
. . . . directional stability
. . . . . gyroscopic stability
. . . . lateral stability
. . . . longitudinal stability
RT aerodynamic stability
aircraft stability
Discos (satellite attitude control)
hovering stability
low speed stability
satellite attitude control
spacecraft motion
spacecraft stability
tumbling motion

attraction
RT affinity
field theory (physics)
∞ force
gravitational fields

attractors (mathematics)
(added June 1997)
GS **attractors (mathematics)**
. strange attractors
RT asymptotic properties
chaos
dynamical systems
nonlinear systems
stochastic processes
trajectories

attributes
USE **properties**

attrition (materials)
USE **comminution**

audio data
DEF Useful information at audio signal frequency.
RT audio frequencies
∞ data
data transmission

audio equipment
GS **audio equipment**
. earphones
. loudspeakers
. microphones
RT audio visual equipment
∞ equipment
monaural signals

audio frequencies
SN (APPROXIMATELY 20 TO 20,000 HZ)
DEF Frequencies corresponding to normally audible sound waves.
GS frequencies
. acoustic frequencies
. . **audio frequencies**
. . . quefrencies
RT acoustic measurement
audio data
audio signals
auditory perception
capstral analysis
extremely low frequencies
monaural signals
noise pollution
radio frequencies
sound generators
sound transmission
sound waves
very low frequencies
voice

audio signals
DEF Signals with a bandwidth of less than 20 kilohertz.
RT audio frequencies
auditory signals
signal processing
signal transmission
∞ signals

audio tapes
(added February 1992)
RT acoustics
audio visual material
information
magnetic tapes
∞ tapes
video tapes

audio visual equipment
(added September 1993)
RT audio equipment
display devices
multimedia
training devices
video equipment
visual aids

audio visual material
(added September 1993)
RT audio tapes
multimedia
visual aids

audiology
RT audiometry
auditory fatigue
auditory perception
hearing

audiometry
DEF The testing and measurement of hearing at various levels.
RT acoustic measurement
audiology
auditory defects
auditory fatigue
auditory perception
auditory stimuli
hearing
masking
∞ measurement
thresholds (perception)

auditory defects
UF *deafness*
hearing loss
GS defects
. **auditory defects**
RT audiometry
bioacoustics
disabilities
losses

auditory fatigue
GS fatigue (biology)
. **auditory fatigue**
RT audiology
audiometry
hearing
noise threshold

auditory perception
UF *sound perception*
GS perception
. sensory perception
. . **auditory perception**
RT acoustics
audio frequencies
audiology
audiometry
auditory sensation areas
binaural hearing
ear
earphones
monaural signals
noise threshold
psychoacoustics
sensitivity
sound localization
sound waves
speech
thresholds (perception)
Weber test

auditory sensation areas
DEF In acoustics, the frequency region enclosed by the curves defining the threshold of pain and the threshold of audibility.
RT auditory perception
auditory stimuli
bioacoustics
thresholds (perception)

auditory signals
UF *chimes*
RT audio signals
bells
cues
horns
monaural signals
psychoacoustics
signal mixing
∞ signals
warning
warning systems

auditory stimuli
GS stimulation
. **auditory stimuli**
RT acoustics
audiometry
auditory sensation areas
noise (sound)
noise intensity
sound generators
sound intensity
∞ stimuli
thresholds (perception)

auditory tasks
GS tasks
. **auditory tasks**
RT acoustics
hearing
noise (sound)

aufeis (ice)
DEF Icing of ground or river water in Arctic areas with continuous permafrost on which the water has continued to flow.
RT ice
melting
permafrost
rivers

Auger effect
DEF The nonradiative transition of an atom from an excited electronic energy state to a lower state with the emission of an electron. The term usually refers to the x ray region of energy states. The final state corresponds to one higher degree of ionization than does the initial state. The effect is an alternative process to the transition to a lower state having the same degree of ionization with the emission of an x ray photon, and thus is analogous to the internal conversion of a nuclear transmission.
RT cosmic ray showers
∞ effects
electron transitions
Langmuir turbulence

Auger showers
USE **cosmic ray showers**

Auger spectroscopy
GS spectroscopy
. **Auger spectroscopy**
RT chemical analysis
electron transitions
spectroscopic analysis
thermites

augmentation
UF *enhancement*
GS **augmentation**
. stability augmentation
. thrust augmentation
RT increasing
spatial filtering

AUOS
USE **Automatic Universal Orbiting Stations**

Auriga constellation
GS constellations
. **Auriga constellation**
RT Zeta Aurigae star

Aurora 7
GS manned spacecraft
. Mercury spacecraft
. . **Aurora 7**
reentry vehicles
. recoverable spacecraft
. . Mercury spacecraft
. . . **Aurora 7**
soft landing spacecraft
. Mercury spacecraft
. . **Aurora 7**
space capsules
. Mercury spacecraft
. . **Aurora 7**
RT Mercury MA-7 flight

auroral absorption
GS attenuation
. atmospheric attenuation
. . **auroral absorption**
energy absorption
. radiation absorption
. . electromagnetic absorption
. . . **auroral absorption**
RT ∞ absorption
light emission
riometers

auroral activity
USE **auroras**

auroral arcs
GS atmospheric radiation
. auroras
. . **auroral arcs**
. . . red arcs
RT ∞ arcs

auroral echoes
GS echoes
. **auroral echoes**
RT radar echoes
radio echoes

auroral electrojets
GS electric current
. ionospheric currents
. . electrojets
. . . **auroral electrojets**
electricity
. atmospheric electricity
. . ionospheric currents
. . . electrojets
. . . . **auroral electrojets**
RT Birkeland currents
equatorial electrojet
telluric currents

auroral ionization
GS ionization
. gas ionization
. . atmospheric ionization
. . . **auroral ionization**
RT auroras
excitation
light emission
photoionization
red arcs

auroral irradiation
GS irradiation
. **auroral irradiation**
RT auroras
electron irradiation
excitation
ion irradiation
photoionization

auroral spectroscopy
GS spectroscopy
. **auroral spectroscopy**
RT channel multipliers
Fabry-Perot spectrometers
light emission
optical emission spectroscopy
spectroscopic analysis
visible spectrum

auroral temperature
GS temperature
. atmospheric temperature
. . **auroral temperature**
RT auroras
ion temperature
ionospheric temperature

auroral zones
DEF Roughly circular bands around either geomagnetic pole above which there is a maximum of auroral activity. The zones lie about 10 deg. to 15 deg. of geomagnetic latitude from the geomagnetic poles.
GS regions
. **auroral zones**
RT auroras
Birkeland currents
magnetic poles
polar radio blackout
polar regions

auroras
DEF Sporadic radiant emissions from the upper atmosphere over middle and high latitudes. Used for auroral activity and polar auroras.
UF *auroral activity*
polar auroras
GS atmospheric radiation
. **auroras**
. . auroral arcs
. . . red arcs
. . radio auroras
RT aeronomy
airglow
auroral ionization
auroral irradiation
auroral temperature
auroral zones
dawn chorus
Earth atmosphere
electron precipitation
ESRO 4 satellite
light emission
magnetic disturbances
night sky
proton precipitation
sky brightness
solar activity
x rays

ausforming
GS forming techniques
. hot working
. . **ausforming**
metal working
. **ausforming**
RT forging
∞ rolling

austenite
DEF A solid solution of carbon in gamma-iron.
RT allotropy
ferrites
iron alloys
martensite
martensitic transformation
microstructure
steels

austenitic stainless steels
DEF Steels having at room temperature a microstructure consisting, at least predominantly,

of austenite. Their austenitic microstructure is attained above all by alloying conditions, e.g., manganese and nickel.
GS alloys
. iron alloys
. . steels
. . . stainless steels
. . . . **austenitic stainless steels**
RT martensitic stainless steels
time temperature parameter

Austin comet
(added May 1991)
GS celestial bodies
. comets
. . **Austin comet**

Australia
GS continents
. **Australia**
nations
. **Australia**
RT Australian space program
Papua New Guinea
Tasmania
Torres Strait

Australian space program
(added February 1989)
GS programs
. space programs
. . **Australian space program**
RT Australia

australites
GS celestial bodies
. meteorites
. . stony meteorites
. . . tektites
. . . . **australites**
RT bediasites

Austria
GS nations
. **Austria**
RT Alps Mountains (Europe)
Austrian space program
Central Europe
Europe

Austrian space program
(added October 1990)
GS programs
. space programs
. . European space programs
. . . **Austrian space program**
RT Austria

autocatalysis
GS catalysis
. **autocatalysis**
RT abiogenesis
catalytic activity
reaction kinetics

autoclaves
RT autoclaving
chemical reactors
∞ containers
pressure vessels

autoclaving
RT autoclaves
curing
heating
leaching
powder metallurgy

autocoders
GS languages
. programming languages
. . Assembly language
. . . **autocoders**
RT compilers
computer programming
computer systems programs
machine oriented languages

autocollimators
USE **collimators**

autocorrelation
DEF In statistics, the simple linear internal correlation of members of a time series (ordered in time or other domains).
GS correlation
. **autocorrelation**
RT cross correlation
data correlation
Fourier analysis
periodic variations
time series analysis

autodynes
GS circuits
. **autodynes**
oscillators
. **autodynes**
RT ∞ detectors
frequency control
heterodyning
signal analyzers
signal detection
signal detectors
vacuum tube oscillators

autogyros
GS V/STOL aircraft
. rotary wing aircraft
. . **autogyros**
. . . Avian 2/180 autogiro

autoignition
USE **spontaneous combustion**

autoionization
GS dissociation
. **autoionization**
ionization
. **autoionization**
RT atomic collisions
many electron effects

autokinesis
GS perception
. sensory perception
. . proprioception
. . . **autokinesis**
. . visual perception
. . . space perception
. . . . **autokinesis**

automata theory
RT adaptive control
artificial intelligence
∞ automation
bionics
computers
cybernetics
depersonalization
heuristic methods
information theory
machine learning
model reference adaptive control
robotics
robots
self adaptive control systems
∞ theories
Turing machines

automated en route ATC
DEF An air traffic control technology which allows computers to make decisions about conflict resolution, the generation of clearances, and their automatic transmission, with the operator standing by to take over in an emergency.
GS ground based control
. air traffic control
. . **automated en route ATC**
traffic control
. air traffic control
. . **automated en route ATC**
RT aircraft guidance
approach control
automated pilot advisory system
flight control
ground–air–ground communication
microwave landing systems

automated guideway transit vehicles
DEF A system of a large number of captive vehicles traveling at relatively close headways on an exclusive guideway controlled by a computer. Used for AGT.
UF *AGT*
GS surface vehicles
. automated transit vehicles
. . **automated guideway transit vehicles**
RT automated mixed traffic vehicles
conveyors
passengers
rail transportation
rapid transit systems
transportation
urban transportation
∞ vehicles

automated mixed traffic vehicles
DEF Low speed, surface vehicles automatically operated and controlled in a pedestrian environment by following a buried wire in the roadways sensing obstacles and stopping at predetermined spots for passenger exit and entry. Used for AMTV.
UF *AMTV*
GS research vehicles
. **automated mixed traffic vehicles**
surface vehicles
. motor vehicles
. . **automated mixed traffic vehicles**
RT automated guideway transit vehicles
passengers
urban transportation
∞ vehicles

automated pilot advisory system
DEF An airport advisory system and an air traffic advisory system designed to improve airport and air traffic advisories at high density uncontrolled airports.
RT air traffic control
automated en route ATC
automatic traffic advisory and resolution
∞ systems

automated radar terminal system
DEF Radar tracking system for use in a terminal area. Primary and secondary radar targets are detected and data for the two are correlated for transmission to a central computer.
RT air traffic control
radar equipment

radar tracking
∞ systems

Automated Transfer Vehicle
(added December 1995)
RT Ariane 5 launch vehicle
cargo spacecraft
Columbus space station
rendezvous guidance
space logistics
∞ vehicles

automated transit vehicles
GS surface vehicles
. **automated transit vehicles**
. . automated guideway transit vehicles
RT conveyors
electric motor vehicles
passengers
rail transportation
rapid transit systems
transportation
urban transportation
∞ vehicles

automatic control
DEF Control of devices and equipment, including aerospace vehicles by automatic means. Used for self regulating.
UF *self regulating*
GS **automatic control**
. adaptive control
. . active control
. . model reference adaptive control
. . self adaptive control systems
. automatic flight control
. . automatic landing control
. automatic frequency control
. automatic gain control
. dynamic control
. feedback control
. . cascade control
. feedforward control
. numerical control
. off-on control
. optimal control
. . H-infinity control
. . linear quadratic Gaussian control
. . time optimal control
. proportional control
. sequential control
RT aircraft control
attitude control
∞ automation
combustion control
∞ control
control equipment
control systems design
controllers
depersonalization
directional control
dynamic characteristics
electric control
electronic aircraft
electronic control
engine control
environmental control
flight control
ground based control
guidance (motion)
helicopter control
hydraulic control
∞ instruments
jet control
landing instruments
lateral control
longitudinal control
manual control
measuring instruments
missile control
negative feedback
optical control
pneumatic control
radio control
real time operation
recording instruments
reentry guidance
regulators
relief valves
remote control
robotics
rocket engine control
sampled data systems
satellite attitude control
satellite control
satellite guidance
self absorption
self alignment
servocontrol
servomechanisms
servomotors
spacecraft control
spacecraft guidance
speed control
stability augmentation
temperature control
Terminal Configured Vehicle Program
thermostats
thrust vector control
tracking problem
transfer functions
turbojet engine control

automatic control valves
GS control equipment
. regulators
. . **automatic control valves**
. . . pressure regulators
. . . relief valves
valves
. **automatic control valves**
. . pressure regulators
. . relief valves
RT actuators
∞ control
dampers (valves)
dynamic characteristics
fluid amplifiers
fluid switching elements
gas valves
hydraulic equipment
pneumatic control
servomechanisms
solenoid valves
temperature control

automatic data processing
USE **data processing**

automatic flight control
UF *AFCS (control system)*
GS automatic control
. **automatic flight control**
. . automatic landing control
flight control
. **automatic flight control**
. . automatic landing control
RT aircraft control
aircraft instruments
autonomous navigation
∞ control
distance measuring equipment
flight management systems
highly maneuverable aircraft
missile control
navigation
navigation aids
radar navigation
radio navigation
solar compasses
Terminal Configured Vehicle Program
thrust vector control

automatic frequency control
DEF An arrangement whereby the frequency of an oscillator is automatically maintained within specified limits. Used for AFC (control).
UF *AFC (control)*
GS automatic control
. **automatic frequency control**
frequency control
. **automatic frequency control**
RT ∞ control
feedback control
frequency modulation
oscillators
tuning

automatic gain control
DEF A process by which gain is automatically adjusted as a function of input or other specified parameter. Used for AGC (control).
UF *AGC (control)*
GS automatic control
. **automatic gain control**
RT ∞ control
feedback control
tuning

automatic landing control
GS automatic control
. automatic flight control
. . **automatic landing control**
flight control
. automatic flight control
. . **automatic landing control**
RT airborne equipment
aircraft equipment
blind landing
distance measuring equipment
flight management systems
instrument landing systems
microwave landing systems
Terminal Configured Vehicle Program

automatic pattern recognition
USE **pattern recognition**

automatic picture transmission
UF *APT (picture transmission)*
GS telecommunication
. communication
. . facsimile communication
. . . **automatic picture transmission**
transmission
. signal transmission
. . data transmission
. . . **automatic picture transmission**
RT television transmission
wave propagation

automatic pilots
DEF Equipment which automatically stabilizes the attitude of a vehicle about its pitch, roll, and yaw axes. Used for autopilots.
UF *autopilots*
GS aircraft instruments
. **automatic pilots**
flight instruments
. **automatic pilots**
RT aircraft equipment
flight control

gyroscopes
highly maneuverable aircraft
homing
landing aids
navigation aids
pilot support systems
∞ pilots
radio altimeters
solar compasses

automatic repeat query
USE **automatic repeat request**

automatic repeat request
(added August 1991)
DEF A request from a receiving device to retransmit the most recent block of data.
UF *ARQ (communication)*
automatic repeat query
automatic request for retransmission
RT data transmission
error correcting codes
error signals
message processing
messages
packet transmission
telecommunication

automatic request for retransmission
USE **automatic repeat request**

automatic rocket impact predictors
USE **computerized simulation**
impact prediction

automatic test equipment
RT ∞ equipment
measuring instruments
self tests
sneak circuit analysis
∞ test equipment

automatic traffic advisory and resolution
SN (AUTOMATIC TRAFFIC ADVISORY AND RESOLUTION SERVICE)
DEF Ground based collision avoidance system using the surveillance and data link capabilities of the discrete address beacon system (DABS). Used for ATARS.
UF *ATARS*
RT automated pilot advisory system
collision avoidance
ground based control
navigation aids
resolution
∞ systems

automatic typewriters
UF *Flexowriters (trademark)*
GS typewriters
. **automatic typewriters**
RT consoles
display devices
printers (data processing)
punched tapes

Automatic Universal Orbiting Stations
(added September 1994)
UF *AUOS*
GS artificial satellites
. space stations
. . **Automatic Universal Orbiting Stations**
stations
. space stations
. . **Automatic Universal Orbiting Stations**
RT ∞ platforms
Russian Federation
spacecraft environments
U.S.S.R. space program

automatic weather stations
DEF Weather stations at which the services of observers are not required. They are usually equipped with telemetric apparatus.
GS stations
. weather stations
. . **automatic weather stations**
RT data acquisition
data collection platforms
instrument packages
meteorological services
ocean data acquisitions systems
remote sensors
weather data recorders

∞ **automation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *instrumental analysis*
RT automata theory
automatic control
command and control
computer vision
computers
control systems design
controllers
cybernetics
data processing
depersonalization
fail-safe systems
feedback control
feedforward control
information theory
man machine systems
materials handling
mechanization
numerical control
office automation
remote control
robotics
self erecting devices
self repairing devices
servomechanisms
systems engineering
tooling

automobile accidents
GS accidents
. **automobile accidents**
RT accident investigation
accident prevention
safety devices

automobile engines
RT external combustion engines
internal combustion engines
piston engines
rotary engines
Stirling engines
turbine engines
Wankel engines

automobile fuels
GS fuels
. chemical fuels
. . liquid fuels
. . . **automobile fuels**
RT aircraft fuels
antiknock additives
diesel fuels
gasoline
hydrocarbon fuels
internal combustion engines
synthane

automobiles
UF *jeeps*
GS surface vehicles
. motor vehicles
. . **automobiles**
. . . electric automobiles
RT air bag restraint devices
antiskid devices
chassis
electric hybrid vehicles
electric motor vehicles
fuel systems
hydrogen engines
ignition systems
lubrication systems
∞ military vehicles
trailers
trucks
∞ vehicles

automorphisms
GS algebra
. group theory
. . homomorphisms
. . . **automorphisms**

autonomic nervous system
GS anatomy
. nervous system
. . **autonomic nervous system**
. . . sympathetic nervous system
RT involuntary actions
∞ systems

autonomous navigation
GS navigation
. **autonomous navigation**
RT automatic flight control
celestial navigation
navigation aids
navigation instruments
satellite navigation systems
space navigation
spacecraft guidance

autonomous spacecraft clocks
DEF Standard Time scale instruments aboard spacecraft with provisions for synchronization with existing satellite-based system (global positioning system, for example).
GS measuring instruments
. time measuring instruments
. . clocks
. . . **autonomous spacecraft clocks**
RT atomic clocks
Global Positioning System
spacecraft instruments
TDR satellites

autonomy
RT adaptive control
command and control
∞ commands
∞ direction
equations of motion
management
model reference adaptive control
self adaptive control systems

autopilots
USE **automatic pilots**

autopsies
RT dissection
pathology

autoradiography
DEF A technique that uses x ray film to visualize radioactivly labeled molecules or

fragments of molecules used in analyzing the length and number of DNA fragements separated by gel electrophoresis.
GS imagery
. photography
. . **autoradiography**
. radiography
. . **autoradiography**
RT black and white photography

autoregressive moving average
(added October 1997)
UF *ARMA (mathematics)*
GS average
. **autoregressive moving average**
RT autoregressive processes
estimating
regression analysis
stochastic processes
time series analysis

autoregressive processes
RT autoregressive moving average
factor analysis
∞ processes
regression analysis
statistical analysis

autorotation
DEF A rotorcraft flight condition in which the lifting rotor is driven entirely by action of the air when the rotorcraft is in motion.
UF *windmilling*
GS gyration
. rotation
. . **autorotation**
RT rotary wing aircraft
rotochutes

autotrophs
DEF Organisms capable of synthesizing organic nutrients directly from simple inorganic substances such as carbon dioxide and inorganic nitrogen.
GS **autotrophs**
. hydrogenomonas
RT heterotrophs

autumn
DEF The season of the year between summer and winter. Its beginning is marked by the autumnal equinox and its end by the winter solstice.
GS seasons
. **autumn**
RT spring (season)
summer
winter

auxiliary equipment (computers)
USE **peripheral equipment (computers)**

auxiliary power sources
GS **auxiliary power sources**
. chemical auxiliary power units
. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 1
. . . SNAP 3
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 11
. . . SNAP 13
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . . SNAP 50
. . space power reactors
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 50
. . . space power unit reactors
. solar auxiliary power units
. . ASTEC solar turboelectric generator
RT aircraft power supplies
direct power generators
electric batteries
electric generators
∞ electric power
electric power supplies
∞ energy sources
ground support equipment
∞ power supplies
spacecraft power supplies
voltage converters (AC to AC)
voltage converters (DC to DC)

auxiliary propulsion
GS propulsion
. **auxiliary propulsion**
RT aeronautical engineering
∞ astronautics
engines
hydrogen oxygen engines
Marquardt R4D engine
missiles
propellants
propulsion system configurations
rocket propellants
space flight
space shuttles
space station propulsion
∞ spacecraft
thrust

AV-8A aircraft
USE **Harrier aircraft**

AV-8B aircraft
USE **Harrier aircraft**

availability
RT abundance
energy policy
reserves
resources

avalanche diodes
DEF A solid state device that takes advantage of avalanche multiplication of the photocurrent.
UF *IMPATT diodes*
TRAPATT diodes
Zener diodes
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **avalanche diodes**
. . . . cryosar
. solid state devices
. . semiconductor devices
. . . **avalanche diodes**
. . . . cryosar
rectifiers
. **avalanche diodes**
. . cryosar
RT Barritt diodes
ion implantation
negative conductance
TRAPATT devices
voltage regulators

avalanches
GS **avalanches**
. electron avalanche
. Townsend avalanche
RT Earth movements
electric discharges
ion production rates
ionizing radiation

AVCS
USE **Advanced Vidicon Camera System (AVCS)**

average
GS **average**
. autoregressive moving average
. mean
RT distribution moments
median (statistics)
mode (statistics)
normality
norms
quality control
Reynolds averaging

AVHRR
USE **Advanced Very High Resolution Radiometer**

Avian 2/180 autogiro
GS research vehicles
. research aircraft
. . **Avian 2/180 autogiro**
V/STOL aircraft
. rotary wing aircraft
. . autogyros
. . . **Avian 2/180 autogiro**

aviation
USE **aeronautics**

aviation meteorology
DEF Weather conditions and meteorological studies pertaining to aeronautics.
GS meteorology
. **aviation meteorology**
RT aircraft accident investigation
aircraft accidents
aircraft hazards
aircraft icing
atmospheric turbulence
civil aviation
clear air turbulence
downbursts
flight conditions
flight hazards
flight safety
fog
meteorological parameters
meteorological services
microbursts (meteorology)
∞ military aviation
nowcasting
numerical weather forecasting
runway conditions
wind shear

aviation psychology
GS medical science
. aerospace medicine
. . **aviation psychology**

psychology
. **aviation psychology**
RT aircraft pilots
military psychology
pilot training
psychological effects
psychological factors
space psychology

aviators
USE **aircraft pilots**

avionics
DEF The use of electronics in all its forms in airborne or aerospace vehicles.
RT ∞ aeronautics
airborne equipment
aircraft communication
aircraft equipment
aircraft instruments
astrionics
∞ astronautics
∞ control
∞ electronics
flat panel displays
flight management systems
guidance (motion)
head–up displays
modularity
pilot support systems
self tests
single event upsets
systems integration
∞ test equipment
video landmark acquisition and tracking

avoidance
GS **avoidance**
. collision avoidance
. . Beacon Collision Avoidance System
. vortex avoidance
RT accident prevention
hazards
traffic
traffic control
warning systems

AVRO 698 aircraft
USE **Vulcan aircraft**

AVRO 707 aircraft
GS Hawker Siddeley aircraft
. **AVRO 707 aircraft**
jet aircraft
. **AVRO 707 aircraft**
monoplanes
. **AVRO 707 aircraft**
research vehicles
. research aircraft
. . **AVRO 707 aircraft**
tailless aircraft
. **AVRO 707 aircraft**
RT ∞ aircraft
delta wings
Vulcan aircraft

AVRO Whitworth HS–748 aircraft
USE **HS–748 aircraft**

AWACS aircraft
UF *Airborne Warning and Control System*
GS **AWACS aircraft**
. E–2 aircraft
. E–3A aircraft
. E–4A aircraft
RT ∞ aircraft
Boeing aircraft
command and control
early warning systems
Grumman aircraft
∞ military aircraft
military technology

awards
SN (EXCLUDES CONTACTS & GRANTS)
DEF Distinctions that are bestowed upon a person or persons due to their special contributions to a field.
RT astronauts
biography
engineers
scientists

AXAF
USE **X Ray Astrophysics Facility**

axes (coordinates)
USE **coordinates**

axes (reference lines)
GS **axes (reference lines)**
. axes of rotation
. . Earth axis
RT coordinates

axes of rotation
GS axes (reference lines)
. **axes of rotation**
. . Earth axis
RT bodies of revolution
rotating bodies
rotation
shafts (machine elements)
symmetrical bodies

axial compression loads
GS loads (forces)
. axial loads
. . **axial compression loads**
. compression loads
. . **axial compression loads**
RT aerodynamic loads
compressing
dynamic loads
shock loads
static loads
structural design criteria
thrust loads

axial compressors
USE **turbocompressors**

axial flow
GS fluid flow
. **axial flow**
RT annular flow
axisymmetric flow
coaxial flow
coaxial nozzles
counterflow
discharge coefficient
flow geometry
one dimensional flow
radial flow
three dimensional flow
two dimensional flow

axial flow compressors
USE **turbocompressors**

axial flow pumps
GS pumps
. **axial flow pumps**
. . turbine pumps
RT centrifugal pumps
fuel pumps

axial flow turbines
GS turbomachinery
. turbines
. . **axial flow turbines**
RT gas turbine engines
gas turbines
steam turbines

axial loads
GS loads (forces)
. **axial loads**
. . axial compression loads
RT aerodynamic loads
compression loads
dynamic loads
static loads
structural design criteria
thrust loads

axial modes
DEF Regimes of vibration along a given axis.
GS modes
. **axial modes**
RT combustion stability
laser modes
propellant combustion
rocket engines

axial strain
DEF Linear strain in a plane parallel to the longitudinal axis of the specimen. Used for axisymmetric deformation and uniaxial strain.
UF *axisymmetric deformation*
uniaxial strain
GS deformation
. **axial strain**
RT elastic deformation
stress–strain diagrams
structural strain

axial stress
GS stresses
. **axial stress**
RT tensile stress

axioms
UF *postulates*
GS mathematical logic
. **axioms**
RT knowledge
∞ logic
∞ mathematics

axisymmetric bodies
GS symmetrical bodies
. **axisymmetric bodies**
. . power law bodies
RT blunt bodies
∞ bodies
bodies of revolution
conical bodies
ducted bodies
lenticular bodies
missile bodies
slender bodies
slender cones
streamlined bodies

axisymmetric deformation
USE **axial strain**

axisymmetric flow
GS fluid flow
. **axisymmetric flow**
. . annular flow
. . Karman–Bodewadt flow
RT axial flow
coaxial flow
conical flow

Couette flow
Crocco method
cylindrical waves
flow geometry
helical flow
. three dimensional boundary layer

axisymmetry
USE **symmetry**

axles
USE **shafts (machine elements)**

axons
GS cells (biology)
. neurons
. . **axons**
RT neurotransmitters

azeotropes
RT binary mixtures
mixtures
solutions

Azerbaijan
(added August 1993)
GS nations
. **Azerbaijan**
RT Asia
Europe

azides (inorganic)
GS nitrogen compounds
. **azides (inorganic)**
. . hydrogen azides
. . sodium azides

azides (organic)
GS nitrogen compounds
. **azides (organic)**
. . sodium azides
. . triaminoguanidinium azide
RT explosives

azimuth
DEF Horizontal direction or bearing. Used for solar azimuth.
UF *solar azimuth*
RT altitude
angles (geometry)
astronomical coordinates
bearing (direction)
celestial reference systems
∞ direction
elevation angle
look angles (tracking)
navigation
∞ orientation
position (location)

azines
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **azines**
. . . . cyanurates
. . . . cyanuric acid
. . . . meclizine
. . . . methylene blue
. . . . phenothiazines
pyrazines
. **azines**
. . cyanurates
. . cyanuric acid
. . meclizine
. . methylene blue
. . phenothiazines
RT dyes

azo compounds
GS nitrogen compounds
. **azo compounds**
. . HMX
. . RDX
RT ∞ chemical compounds
dyes

azoles
DEF Compounds that contain a five-membered heterocylic ring containing one or more nitrogen atoms.
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **azoles**
. . . . acetazolamide
. . . . oxazole
. . . . pyrroles
. . . . . carbazoles
. . . . . indoles
. . . . . tryptophan

Azores
(added July 1991)
GS landforms
. islands
. . **Azores**
nations
. Portugal
. . **Azores**
RT Atlantic Ocean

Azotobacter
GS microorganisms
. bacteria
. . **Azotobacter**

azulene
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **azulene**
terpenes
. **azulene**

Azur satellite
GS artificial satellites
. scientific satellites
. . **Azur satellite**
RT European space programs
international cooperation
West Germany

B

B stars
UF *helium stars*
GS celestial bodies
. stars
. . early stars
. . . hot stars
. . . . **B stars**
. . . . . **shell stars**
. . . . . Sigma Orionis
RT **blue stars**
Herbig–Haro objects
limb brightening
limb darkening
peculiar stars
stellar composition
Wolf–Rayet stars

B–1 aircraft
GS attack aircraft
. bomber aircraft
. . **B–1 aircraft**
jet aircraft
. **B–1 aircraft**
North American aircraft
. **B–1 aircraft**
RT ∞ aircraft
bombing equipment
bombs (ordnance)
combat
∞ military aircraft
multiengine vehicles
warfare
∞ winged vehicles

B–2 aircraft
(added September 1992)
UF *stealth bomber*
GS attack aircraft
. bomber aircraft
. . **B–2 aircraft**
jet aircraft
. **B–2 aircraft**
RT ∞ aircraft
∞ military aircraft
X–36 aircraft

B–26 aircraft
UF *Invader aircraft*
GS attack aircraft
. bomber aircraft
. . **B–26 aircraft**
Martin aircraft
. **B–26 aircraft**
monoplanes
. **B–26 aircraft**
RT ∞ aircraft

B–47 aircraft
UF *RB–47 aircraft*
Stratojet aircraft
XB–47 aircraft
GS attack aircraft
. bomber aircraft
. . **B–47 aircraft**
Boeing aircraft
. **B–47 aircraft**
jet aircraft
. **B–47 aircraft**
monoplanes
. **B–47 aircraft**
RT ∞ aircraft

B–50 aircraft
UF *RB–50 aircraft*
superfortress aircraft
GS attack aircraft
. bomber aircraft
. . **B–50 aircraft**
Boeing aircraft
. **B–50 aircraft**
monoplanes
. **B–50 aircraft**
RT ∞ aircraft

B–52 aircraft
UF *Stratofortress aircraft*
GS attack aircraft
. bomber aircraft
. . **B–52 aircraft**
Boeing aircraft
. **B–52 aircraft**
jet aircraft
. **B–52 aircraft**
monoplanes
. **B–52 aircraft**
RT ∞ aircraft
Pegasus air–launched booster
turbofan engines

B–57 aircraft
UF *Canberra bomber*
RB–57 aircraft
GS attack aircraft
. bomber aircraft
. . **B–57 aircraft**
jet aircraft
. **B–57 aircraft**
Martin aircraft
. **B–57 aircraft**
monoplanes
. **B–57 aircraft**
RT ∞ aircraft
Canberra aircraft

B–58 aircraft
UF *Hustler aircraft*
GS attack aircraft
. bomber aircraft
. . **B–58 aircraft**
General Dynamics aircraft
. **B–58 aircraft**
jet aircraft
. **B–58 aircraft**
monoplanes
. **B–58 aircraft**
supersonic aircraft
. **B–58 aircraft**
tailless aircraft
. **B–58 aircraft**
RT ∞ aircraft

B–66 aircraft
UF *Destroyer aircraft*
RB–66 aircraft
GS attack aircraft
. bomber aircraft
. . **B–66 aircraft**
jet aircraft
. **B–66 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **B–66 aircraft**
monoplanes
. **B–66 aircraft**
RT ∞ aircraft

B–70 aircraft
UF *Valkyrie aircraft*
XB–70 aircraft
GS attack aircraft
. bomber aircraft
. . **B–70 aircraft**
jet aircraft
. **B–70 aircraft**
monoplanes
. **B–70 aircraft**
North American aircraft
. **B–70 aircraft**
research vehicles
. research aircraft
. . **B–70 aircraft**
supersonic aircraft
. **B–70 aircraft**
RT ∞ aircraft

B–103 aircraft
USE **Buccaneer aircraft**

B–ᵀ–W devices
USE **bulk acoustic wave devices**

babbitt metal
DEF Any of the white alloys composed primarily of tin or lead and of lesser amounts of antimony, copper, and other metals, and used for bearings.
GS alloys
. antimony alloys
. . **babbitt metal**
. copper alloys
. . **babbitt metal**
. tin alloys
. . **babbitt metal**
RT bearing alloys

baboons
GS animals
. vertebrates
. . mammals
. . . primates
. . . . **baboons**

BAC 111 aircraft
GS BAC aircraft
. **BAC 111 aircraft**
jet aircraft
. turbofan aircraft
. . **BAC 111 aircraft**
monoplanes
. **BAC 111 aircraft**
passenger aircraft
. **BAC 111 aircraft**
transport aircraft
. **BAC 111 aircraft**
RT ∞ aircraft

BAC aircraft
UF *British Aircraft Corp aircraft*
GS **BAC aircraft**
. BAC 111 aircraft
. Canberra aircraft
. H–126 aircraft
. jet provost aircraft
. Scimitar aircraft
. TSR–2 aircraft
. Valiant aircraft
. VC–10 aircraft
. Viscount aircraft
RT ∞ aircraft

BAC TSR 2 aircraft
USE **TSR–2 aircraft**

Bacillus
SN (RESTRICTED TO MEMBERS OF THE GENUS BACILLUS; DOES NOT INCLUDE GENERAL MORPHOLOGICAL CLASSIFICATIONS)
GS microorganisms
. bacteria
. . **Bacillus**
. . . stearothermophilus

back injuries
GS injuries
. **back injuries**
RT whiplash injuries

backfire
RT combustion
deflagration
explosions
fires
flame deflectors
flame propagation
flashback

backfire antennas
DEF Antennas consisting of radiating feeds, reflector elements, and reflecting surfaces such that the antennas function as open resonators, with radiation from the open end of the resonator.
GS antennas
. **backfire antennas**
RT antenna radiation patterns
dipole antennas
endfire arrays
microwave antennas
radio antennas

background noise
DEF In recording and reproducing, the total system noise independent of whether or not a signal is present. The signal is not to be included as part of the noise. In receivers, the noise in the absence of signal modulation on the carrier.
RT channel noise
cosmic noise
elastic waves
electromagnetic noise
ionospheric noise
∞ noise
noise (sound)
noise measurement
noise spectra
noise threshold
∞ radiation
random noise
∞ rays
signal to noise ratios
squelch circuits

background radiation
RT big bang cosmology
continuous radiation
corpuscular radiation
Cosmic Background Explorer satellite
cosmic noise
electromagnetic noise
extraterrestrial radiation
high altitude tests
ionospheric noise
∞ radiation
relic radiation
sky radiation

backings
USE **backups**

backlobes
DEF Radiation lobes whose axes make angles of approximately 180 degrees with respect to the axes of the major lobes of the antennas. By extension radiation lobes in the half-space opposed to the direction of peak activity.
RT antenna design
antenna radiation patterns
directional antennas
∞ lobes

backscattering
DEF Scattering of radiation in a direction having a component opposite its original direction of propagation.
GS scattering
. **backscattering**
RT differential absorption lidar
forward scattering
laser plasma interactions
microwave signatures
nuclear scattering
scatter propagation

backshores
USE **beaches**

backups
DEF Items kept available to replace items which fail to perform satisfactorily. Items under development intended to perform the same general functions another item also under development performs. Used for backings.
UF *backings*
RT redundant components
reserves
welding

backward differencing
DEF A method of solving a parabolic problem for approximating a time derivative in terms of a previous time step.
RT differential equations
numerical stability
problem solving

backward facing steps
DEF A step structure which faces an oncoming flow. Used for rearward facing steps.
UF *rearward facing steps*
RT boundary layer flow
flow geometry
fluid boundaries
forward facing steps
reattached flow
recirculative fluid flow
stairsteps
∞ steps

backward wave tubes
GS electron tubes
. vacuum tubes
. . microwave tubes
. . . traveling wave tubes
. . . . **backward wave tubes**
. . . . . helitrons
microwave equipment
. microwave tubes
. . traveling wave tubes
. . . **backward wave tubes**
. . . . helitrons
RT beam currents
electron transfer
microwave oscillators

backward waves
DEF In traveling wave tubes, waves whose group velocity is opposite to the direction of electron-stream motion.
RT elastic waves
electromagnetic radiation
solitary waves
transmission lines
traveling wave tubes
traveling waves

backwash
SN (EXCLUDES PROCESSES OF BACKWASHING)
UF *sidewash*
RT boundary layer stability
downwash
slipstreams
Strouhal number
turbulence
wakes

bacteria
GS microorganisms
. **bacteria**
. . actinomycetes
. . archaebacteria
. . Azotobacter
. . Bacillus
. . . stearothermophilus
. . Clostridium
. . . Clostridium botulinum
. . Escherichia
. . hydrogenomonas
. . Klebsiella
. . nitrobacter
. . pseudomonas
. . salmonella
. . sarcina
. . serratia
. . staphylococcus
. . streptococcus
. . streptomycetes
RT aerobes
anaerobes
bacteriology
blight
colonies
eukaryotes
gnotobiotics
invertebrates
panspermia
pathogens
prokaryotes
saprophytes
waste treatment

bacterial diseases
SN (EXCLUDES PLANT DISEASES)
GS diseases
. infectious diseases
. . **bacterial diseases**
. . . cholera
. . . diphtheria
. . . keratitis
. . . syphilis
. . . tuberculosis
. . . typhoid
. . . typhus
RT Clostridium
conjunctivitis
dermatitis
encephalitis
meningitis
nephritis
pneumonia

bactericides
DEF Agents that destroy microorganisms. Also known as germicides. Used for germicides.
UF *germicides*
RT antiinfectives and antibacterials
antiseptics
chemical sterilization

ethylene oxide
fumigation
sterilization

bacteriology
GS microbiology
. **bacteriology**
RT archaebacteria
bacteria
biochemistry
∞ biology
Clostridium botulinum
colonies
endotoxins
gnotobiotics
vaccines

bacteriophages
GS microorganisms
. viruses
. . **bacteriophages**
RT interferon

badlands
DEF Intricately stream-dissected topography, characterized by a very fine drainage network with high drainage densities (77 to 747 miles per square mile) and short steep slopes with narrow interfluves. Badlands develop on the surface with little or no vegetative cover, overlying unconsolidated or poorly cemented clays or silts, sometimes with soluble minerals such as gypsum or halite. They may also be induced in humid areas by removal of the vegetative cover through overgrazing, or by air pollution from sulfide smelting. The term was first applied to an area in western South Dakota, which was called "mauvaises terres" by the early French fur traders.
GS land
. **badlands**
RT barren land
topography

baffles
DEF Plates that regulate the flow of a fluid, e.g., a heat exchanger, boiler flue, or automotive muffler.
RT attenuators
∞ barriers
blast deflectors
conical flow
damping
deflectors
∞ diffusers
diverters
dividers
ducts
flame deflectors
liquid sloshing
louvers
mixers
mufflers
panels
reflectors
shielding
suppressors

baggage
GS cargo
. **baggage**
RT air cargo
bags
ground handling

bags
GS **bags**
. air bag restraint devices
. gas bags
RT baggage
∞ containers
packages

Bahamas
GS landforms
. islands
. . West Indies
. . . **Bahamas**
nations
. **Bahamas**
RT Caribbean region

Bahrain
GS landforms
. islands
. . **Bahrain**
nations
. **Bahrain**

bailout
RT air drop operations
ejection
ejection injuries
ejection seats
ejection training
escape (abandonment)
escape systems
flying ejection seats
jettison systems
jettisoning
parachute descent
parafoils

bainite
DEF Metastable microstructure or microstructures resulting from the transformation of austenite at temperatures between those which produce pearlite and martensite.
RT bainitic steel
iron alloys
microstructure
steels

bainitic steel
GS alloys
. iron alloys
. . **steels**
. . . **bainitic steel**
RT bainite

Baja California
USE **Lower California (Mexico)**

bajadas
USE **fans (landforms)**

Bakelite (trademark)
RT ceramics
resins
thermosetting resins

bakeout
USE **degassing**

Baker-Nunn camera
GS optical equipment
. cameras
. . **Baker-Nunn camera**
photographic equipment
. cameras
. . **Baker-Nunn camera**
RT astronomical photography
Schmidt cameras

baking
SN (EXCLUDES FOOD PROCESSING)
GS heating
. **baking**
RT casting
degassing
drying
heat treatment
ovens
roasting
sterilization

balance
GS **balance**
. aerodynamic balance
. heat balance
. material balance
. . water balance
RT compensators
∞ equilibrium
∞ mass balance
mass distribution
weight indicators

balance equations
USE **equations**

balanced amplifiers
USE **push-pull amplifiers**

balancing
RT eccentricity
∞ equilibrium
flywheels
man machine systems
stabilization

Baldwin-Lomax turbulence model
(added May 1997)
GS **models**
. mathematical models
. . turbulence models
. . . **Baldwin-Lomax turbulence model**
RT computational fluid dynamics
eddy viscosity
flow equations
turbulent boundary layer
turbulent flow

ball bearings
GS bearings
. antifriction bearings
. . **ball bearings**
RT balls
elastohydrodynamics
needle bearings
roller bearings
thrust bearings

ball lightning
DEF A relatively rare form of lightning, consisting of a reddish, luminous ball, of the order of one foot in diameter, which may move rapidly along solid objects or remain floating in midair. Hissing noises emanate from such balls, and they sometimes explode noisily but may also appear noiselessly.
GS electric current
. electric discharges
. . lightning
. . . **ball lightning**
RT atmospheric electricity

∞ **ballast**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ballast (mass)
ballasts (impedances)

ballast (mass)
RT aerodynamic stability
∞ ballast
buoyancy
counterbalances
floating
floats
hydrodynamics
loads (forces)
mass distribution
stability
static loads

ballasts (impedances)
DEF Devices that by means of inductance, capacitance, or resistance, singly or in combination, limit the lamp current of fluorescent or mercury lamps to the required value for proper operation, and where necessary provide the required starting voltage and current and, in ballasts for rapid-start lamps provide low-voltage cathode heating.
RT ∞ ballast
capacitors
inductors
luminaires
resistors
transformers

ballistic cameras
DEF Ground-based cameras using multiple exposures on the same plate to record the trajectories of rockets.
GS optical equipment
. cameras
. . **ballistic cameras**
photographic equipment
. cameras
. . **ballistic cameras**
RT ground support equipment
high speed cameras
optical tracking
rangefinding
stroboscopes
trajectory measurement

ballistic missile decoys
GS countermeasures
. **ballistic missile decoys**
decoys
. **ballistic missile decoys**
RT missile defense
reentry decoys

Ballistic Missile Early Warning System
UF *BMEWS*
GS warning systems
. early warning systems
. . **Ballistic Missile Early Warning System**
RT air defense
military technology
radar tracking
∞ systems

ballistic missile submarines
GS water vehicles
. ships
. . submarines
. . . **ballistic missile submarines**
. underwater vehicles
. . submarines
. . . **ballistic missile submarines**
RT fleet ballistic missiles
missile launchers
mobile missile launchers
navy
Poseidon missiles
sea launching

ballistic missiles
SN (GUIDED ONLY DURING INITIAL POWERED PHASE)
DEF Missiles designed to operate primarily in accordance with the laws of ballistics.
GS missiles
. **ballistic missiles**
. . field army ballistic missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
. . . Minuteman ICBM
. . . MX missile
. . . Titan ICBM
. . . . Titan 1 ICBM
. . . . Titan 2 ICBM
. . intermediate range ballistic missiles
. . . Blue Streak missile
. . . Jupiter missile
. . . polaris missiles
. . . . Polaris A1 missile
. . . . Polaris A2 missile
. . . . Polaris A3 missile
. . Pershing missile
. . Poseidon missiles
. . short range ballistic missiles
. . Skybolt missile
. . Subroc missile
. . V-2 missile
RT antimissile missiles
Safeguard system
surface to surface missiles

ballistic ranges
GS ranges (facilities)
. test ranges
. . **ballistic ranges**
test facilities
. test ranges
. . **ballistic ranges**
RT downrange
hydroballistics
missile ranges

ballistic trajectories
DEF Trajectories followed by a body being acted upon only by gravitational forces and the resistance of the medium through which it passes.
GS trajectories
. **ballistic trajectories**
RT ascent trajectories
ballistics
coasting flight
descent trajectories
downrange
free fall
impact prediction
midcourse trajectories
missile trajectories
parabolic flight

∞ **ballistic vehicles**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *nonlifting vehicles*
RT reentry vehicles
rocket vehicles
test vehicles
∞ vehicles
weapons

ballistics
DEF The science that deals with the motion, behavior and effects of projectiles, especially bullets, aerial bombs, rockets or the like; the science or art of designing and hurling projectiles so as to achieve a desired performance.
GS **ballistics**
. hydroballistics
. interior ballistics
. terminal ballistics
RT aerodynamic drag
ballistic trajectories
gas guns
howitzers
hypervelocity guns
ordnance
projectiles
propellants
trajectories
trajectory analysis
trajectory measurement

ballistocardiography
GS bioengineering
. biometrics
. . cardiography
. . . **ballistocardiography**
RT electrocardiography
phonocardiography
seismocardiography

balloon flight
RT ∞ flight
meteorological flight
vertical flight

balloon sounding
GS sounding
. **balloon sounding**
RT atmospheric sounding
in situ measurement
radiosondes
superpressure balloons

balloon-borne instruments
GS measuring instruments
. **balloon-borne instruments**
RT airborne equipment
balloons
high altitude balloons
meteorological instruments
radiosondes
telescopes

ballooning modes
GS modes
. **ballooning modes**
RT magnetohydrodynamic stability
plasma control
plasma equilibrium
tearing modes (plasmas)

balloons
GS expandable structures
. inflatable structures
. . **balloons**
. . . high altitude balloons
. . . . jimsphere balloons
. . . . skyhook balloons
. . . . superpressure balloons
. . . meteorological balloons
. . . . jimsphere balloons
. . . . ROBIN balloons
. . . microballoons
. . . tethered balloons
RT ∞ aircraft
airships
ascent

balloon-borne instruments
ballutes
folding structures
gas bags
gondolas
observation aircraft
pilotless aircraft
stratoscope telescopes

balls
RT ball bearings
falling spheres
joints (junctions)
spheres
valves

ballutes
GS brakes (for arresting motion)
. **aerodynamic brakes**
. . **ballutes**
drag devices
. **aerodynamic brakes**
. . **ballutes**
expandable structures
. **inflatable structures**
. . **ballutes**
RT air drop operations
aircraft brakes
balloons
drag chutes
folding structures
parachutes

Balmer series
GS spectra
. **radiation spectra**
. . **electromagnetic spectra**
. . . **line spectra**
. . . . **Balmer series**
RT absorption spectra
atomic spectra
electron transitions
emission spectra
H beta line
H gamma line
H lines
hydrogen

balsa
RT trees (plants)
wood

Baltic sea
GS seas
. **Baltic sea**
RT Estonia
Latvia

Baltic Shield (Europe)
GS rocks
. **bedrock**
. . **Baltic Shield (Europe)**
RT Earth resources
Europe
Precambrian period

Banach space
GS algebra
. **vector spaces**
. . **Banach space**
. . . **Hilbert space**
. . . . **Sobolev space**
analysis (mathematics)
. **function space**
. . **Banach space**
. . . **Hilbert space**
. . . . **Sobolev space**
. **functional analysis**
. . **Banach space**
. . . **Hilbert space**
. . . . **Sobolev space**
RT harmonic analysis
metric space

band rationing
GS image processing
. **band rationing**
RT image enhancement
multispectral band scanners
remote sensing
spectral bands

band structure of solids
RT Brillouin zones
conduction bands
electron transitions
energy gaps (solid state)
forbidden bands
heterojunction devices
quantum wells

bandgap
USE **energy gaps (solid state)**

bandpass filters
DEF Wave filters having a single transmission band, neither of the cut-off frequencies being zero or infinity.
GS electromagnetic wave filters
. **bandpass filters**
. . **crystal filters**
. . **tracking filters**
RT adaptive filters
bandstop filters
bandwidth
electric filters
∞ **filters**
FIR filters
microwave filters
optical filters
ultraviolet filters
vocoders

∞ **bands**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT absorption spectra
anchors (fasteners)
bandwidth
Bloch band
broadband
clamps
clips
conduction bands
edge dislocations
energy bands
fasteners
forbidden bands
frequencies
Herzberg bands
holders
low frequencies
narrowband
photoluminescent bands
plastic deformation
ring structures
Schumann-Runge bands
sidebands
spectral bands
straps
Swan bands
Vegard-Kaplan bands

bandstop filters
DEF Filters that block signals of a specific frequency or a band of frequencies.
GS electromagnetic wave filters
. **electric filters**
. . **bandstop filters**
RT adaptive filters
bandpass filters
bandwidth
crystal filters
∞ **filters**
high pass filters
low pass filters
microwave filters
optical filters
tracking filters
waveguide filters

bandwidth
GS **bandwidth**
. **broadband**
. **narrowband**
. **spectral line width**
RT bandpass filters
∞ **bands**
bandstop filters
broadband amplifiers
channel capacity
dynamic characteristics
frequencies
frequency ranges
impedance
laser windows
resonant frequencies
speech baseband compression
tracking filters
transfer functions
width
windows (intervals)

bang-bang control
USE **on-off control**

Bangladesh
UF *East Pakistan*
GS nations
. **Bangladesh**
RT Asia
India
Pakistan

banking flight
USE **turning flight**

Barany chair
DEF A kind of chair in which a person is revolved to test his susceptibility to vertigo. It is named after the Swedish physician Robert Barany who lived from 1876 to 1936.
GS seats
. **Barany chair**
RT rotating environments
tolerances (physiology)
vertigo

Barbados
GS landforms
. **islands**
. . **West Indies**
. . . **Barbados**
nations
. **Barbados**
RT Caribbean region

barchans
USE **dunes**

Bardeen approximation
USE **barrier layers**
electrical properties
surface properties

Bardeen–Cooper–Schrieffer theory
USE **BCS theory**

Barents Sea
GS seas
. **Barents Sea**
RT Arctic Ocean
U.S.S.R.

barite
GS minerals
. **barite**
sulfur compounds
. sulfates
. . **barite**

barium
GS chemical elements
. **barium**
. . barium isotopes
metals
. **barium**
. . barium isotopes

barium alloys
GS alloys
. **barium alloys**

barium compounds
GS **barium compounds**
. barium ferrates
. barium fluorides
. barium oxides
. barium sulfides
. barium titanates
. barium zirconates
RT ∞ **alkaline earth compounds**
∞ **chemical compounds**
∞ **metal compounds**

barium ferrates
GS barium compounds
. **barium ferrates**
iron compounds
. ferrates
. . **barium ferrates**

barium fluorides
GS barium compounds
. **barium fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . **barium fluorides**
. halides
. . fluorides
. . . **barium fluorides**
. . metal halides
. . . **barium fluorides**

barium ion clouds
GS clouds (meteorology)
. artificial clouds
. . chemical clouds
. . . **barium ion clouds**
RT Earth magnetosphere
electric fields
geomagnetism
lines of force
metal ions
rocket sounding
thermites

barium isotopes
GS chemical elements
. alkaline earth metals
. . **barium isotopes**
. barium
. . **barium isotopes**
. nuclides
. . isotopes
. . . **barium isotopes**
metals
. alkaline earth metals
. . **barium isotopes**
. barium
. . **barium isotopes**

barium oxides
GS barium compounds
. **barium oxides**
chalcogenides
. oxides
. . metal oxides
. . . alkaline earth oxides
. . . . **barium oxides**
RT high temperature superconductors
YBCO superconductors

barium sulfides
GS barium compounds
. **barium sulfides**
chalcogenides
. sulfides
. . inorganic sulfides
. . . **barium sulfides**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **barium sulfides**

barium titanates
GS barium compounds
. **barium titanates**
titanium compounds
. titanates
. . **barium titanates**
RT dielectrics
ferroelectric materials

barium zirconates
GS barium compounds
. **barium zirconates**
zirconium compounds
. zirconates
. . **barium zirconates**

Barkhausen effect
RT ∞ **effects**
electromagnetic measurement
electromagnetism
oscillographs

barley
GS farm crops
. grains (food)
. . **barley**
plants (botany)
. **barley**
RT agriculture
blight
botany
crop growth
crop vigor
∞ crops
∞ food
irrigation
seeds

baroclinic instability
DEF Hydrodynamic instability arising from the existence of a meridional temperature gradient (and hence a thermal wind) in an atmosphere in quasigeostrophic equilibrium and possessing static stability.
GS stability
. **baroclinic instability**
RT atmospheric circulation
atmospheric models
baroclinic waves
baroclinity
flow stability
geostrophic wind
meteorology
zonal flow (meteorology)

baroclinic waves
GS elastic waves
. capillary waves
. . gravity waves
. . . **baroclinic waves**
surface waves
. capillary waves
. . gravity waves
. . . **baroclinic waves**
RT baroclinic instability
baroclinity
barotropic flow
cyclones
density distribution
geostrophic wind
radiation pressure
stratified flow
wave amplification
∞ **waves**
zonal flow (meteorology)

baroclinity
DEF The state of stratification in a fluid in which surfaces of constant pressure (isobaric) intersect surfaces of constant density (isosteric). The number, per unit area, of isobaric–isosteric solenoids intersecting a given surface is a measure of baroclinity.
RT baroclinic instability
baroclinic waves
barotropic flow
barotropism
∞ isobars
meteorological solenoids
stratified flow

barometers
DEF Instruments used to measure atmospheric pressure.
GS measuring instruments
. meteorological instruments
. . **barometers**
. pressure gages
. . **barometers**
RT altimeters
hypsometers
manometers
pressure measurement
vacuum gages

barometric pressure
USE **atmospheric pressure**

baroreceptors
GS anatomy
. sense organs
. . **baroreceptors**
receptors (physiology)
. **baroreceptors**
RT pressure
proprioceptors

barotrauma
GS injuries
. **barotrauma**
RT decompression sickness
diving (underwater)

barotropic flow
GS fluid flow
. **barotropic flow**
RT air currents
air flow
baroclinic waves
baroclinity
barotropism
flow characteristics
lee waves
planetary waves
Rayleigh waves
Rossby regimes
sea breeze
viscous flow
wind (meteorology)
wind shear

barotropism
DEF The state of a fluid in which surfaces of constant density (or temperature) are coincident with surfaces of constant pressure; it is the state of zero baroclinity.
GS **barotropism**
. planetary waves
RT baroclinity
barotropic flow
∞ isobars

∞ **barrages**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT artillery fire
dams

barred galaxies
DEF Spiral galaxies whose nuclei are in the shape of bars at the ends of which the spiral arms begin. About one fifth of all spiral galaxies are barred spirals.
GS celestial bodies
. galaxies
. . spiral galaxies
. . . **barred galaxies**
RT disk galaxies
galactic structure
Hubble diagram
local group (astronomy)
star clusters
star distribution
stars
Virgo galactic cluster

∞ **barrels**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT barrels (containers)
∞ drums
gun launchers

barrels (containers)
UF *casks*
RT ∞ barrels
∞ containers
drums (containers)

barren land
DEF Rugged or unproductive lands devoid of significant vegetation compared to adjacent areas because of environmental factors such as adverse climate, poor soil, o, or winds. Used for barrens.
UF *barrens*
GS land
. **barren land**
RT arid lands
badlands
desertification
deserts
land use
Sahara Desert (Africa)
sites
soils
topography

barrens
USE **barren land**

barricades
USE **barriers**

barrier injection transit time diodes
USE **Barritt diodes**

barrier layers
UF *Bardeen approximation*
RT ∞ barriers
Barritt diodes
interlayers
JFET
joints (junctions)
junction diodes
junction transistors
∞ layers
MBM junctions
nonohmic effect
resonant tunneling
seals (stoppers)
semiconductor devices
SIS (semiconductors)
surface layers
tunnel junctions
waterproofing
Zener effect

∞ **barriers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Any materials limiting passage through itself of solids, liquids, semisolids, gases, or forms of energy such as ultraviolet light. Used for barricades and obstacles.
UF *barricades*
obstacles
RT abort apparatus
acoustic velocity
arresting gear
baffles
barrier layers
barriers (landforms)
Barritt diodes
blood–brain barrier
bulkheads
chains
closures
constrictions
curtains
dams
dividers
electrode film barriers
enclosures
fences (barriers)
gates (openings)
guards (shields)
MBM junctions
safety devices
Schottky diodes
seals (stoppers)
shielding
thermal barriers (plasma control)
vapor barrier clothing
walls
wind (meteorology)
windows (apertures)

barriers (landforms)
DEF Elongated offshore ridges or masses, usually of sand, rising above the high-tide level, generally extending parallel to, and at some distance from, the shore, and separated from it by some kind of coastal bay. It is built up by the action of waves and currents.
GS landforms
. **barriers (landforms)**
. . Outer Banks (NC)
. . reefs
RT ∞ barriers
bars (landforms)
island arcs

Barritt diodes
DEF Barrier injection transit time diodes that operate similarly to IMPATT diodes. The operating frequencies are determined by the transit times across the drift. Used for barrier injection transit time diodes.
UF *barrier injection transit time diodes*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **Barritt diodes**
. solid state devices
. . semiconductor devices
. . . **Barritt diodes**
RT avalanche diodes
barrier layers
∞ barriers
carrier injection
cryosar
electric potential
injection
junction diodes
microwave oscillators
rectifiers
Schottky diodes
semiconductor junctions
shot noise
transit time

bars
GS **bars**
. elastic bars
. prismatic bars
RT metal plates
rods
structural members

bars (landforms)
DEF A generic term for any of various elongate offshore ridges, banks, or mounds of sand, gravel, or other unconsolidated material, submerged at least at high tides, and built up by the action of waves or currents on the water bottom, especially at the mouth of a river or estuary, or at a slight distance from the beach. Bars commonly form obstructions to water navigation.
UF *tombolos*
GS landforms
. **bars (landforms)**
RT barriers (landforms)
beaches
coastal plains
lagoons

littoral drift
reefs

barycenter
USE **center of gravity**

baryon resonance
DEF An anomaly found in scattering cross sections indicating the existence of an unstable, excited state of baryon.
GS resonance
. **baryon resonance**
RT baryons
hyperons
scattering cross sections

baryons
GS particles
. elementary particles
. . fermions
. . . **baryons**
. . . . hyperons
. . . . . xi hyperons
. . . . omega-mesons
. . . . rho-mesons
. . . . sigma-mesons
. . hadrons
. . . **baryons**
. . . . hyperons
. . . . . xi hyperons
. . . . omega-mesons
. . . . rho-mesons
. . . . sigma-mesons
RT baryon resonance
cold neutrons
dark matter
eta-mesons
fast neutrons
gravitinos
kaons
meson resonance
mesons
muons
neutrons
nucleons
photoneutrons
pions
protons
recoil protons
solar protons
thermal neutrons

basalt
GS rocks
. igneous rocks
. . **basalt**
RT cones (volcanoes)
lunar maria
Mars volcanoes
regolith
soils
volcanoes
volcanology

base flow
DEF Fluid flow at the base or extreme aft end of a body.
GS fluid flow
. **base flow**
RT head flow
wakes

base heating
GS heating
. **base heating**
RT afterbodies
convection
exhaust nozzles
jet exhaust
jet impingement
∞ radiation
rocket exhaust

base pressure
DEF In aerodynamics, the pressure exerted on the base, or extreme aft end, of a body, as of a cylindrical or boattailed body or of a blunt-trailing-edge wing, in a fluid flow.
GS pressure
. **base pressure**
RT aerodynamic drag

basements
RT buildings
floors
foundations

∞ **bases**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bases (chemical)
data bases
foundations
inorganic compounds
ion concentration
lunar bases
space bases
stations

bases (chemical)
GS **bases (chemical)**
. adenines
. **alkalies**
. . lithium hydroxides
. . potassium hydroxides
. . sodium hydroxides
. alkaloids
. . atropine
. . betaines
. . caffeine
. . colchicine
. . ergotamine
. . hyoscine
. . lysergine
. . morphine
. . nicotinamide
. . nicotine
. . pilocarpine
. . reserpine
. . strychnine
. . tropyl compounds
. guanines
. piperidine
. pyridines
. quinoline
. thymidine
. uracil
RT alkalinity
anhydrides
∞ **bases**
buffers (chemistry)
pH

bases (foundations)
USE **foundations**

BASIC (programming language)
GS languages
. programming languages
. . **BASIC (programming language)**
RT computer programming

basins
USE **structural basins**

basins (containers)
RT tanks (containers)

baskets
RT ∞ containers
gondolas

bastnaesite
GS carbon compounds
. carbonates
. . **bastnaesite**
minerals
. **bastnaesite**
rare earth compounds
. cerium compounds
. . **bastnaesite**

batch processing
GS data processing
. **batch processing**
RT computer programming
computer programs
data processing equipment
∞ processing

bathing
GS cleaning
. washing
. . **bathing**
RT cooling
hygiene
waste water

batholiths
GS rock intrusions
. **batholiths**
rocks
. bedrock
. . **batholiths**
RT granite
igneous rocks

baths
SN (EXCLUDES BATHING)
GS **baths**
. salt baths
RT dipping
electroplating
heat transfer
quenching (cooling)
∞ soaking
submerging
water immersion

bathymeters
DEF Instruments that measure the ocean depths and check the topography of the ocean floor. Used for bathymetry.
UF *bathymetry*
GS measuring instruments
. **bathymeters**
RT depth measurement
oceanography
sounding
underwater research laboratories

bathymetry
USE **bathymeters**

bathythermographs
GS measuring instruments
. temperature measuring instruments
. . **bathythermographs**
recording instruments
. **bathythermographs**
RT pressure gradients
temperature gradients

bats
GS animals
. vertebrates
. . mammals
. . . **bats**

batteries
USE **electric batteries**

battery chargers
RT charge efficiency
∞ charging
electric batteries
pulse charging
storage batteries

battery separators
USE **separators**

Bauschinger effect
RT ∞ effects
fatigue (materials)
microstructure

bauxite
DEF A ferruginous aluminium hydroxide rock consisting of several minerals. It is the principle source for aluminum.
RT aluminum oxides
minerals
rocks

bay ice
GS ice
. **bay ice**
RT freezing
frost
ice formation
ice mapping
ice reporting
lake ice
low temperature
navigation
oceanography
sea ice
slush
water

Bayard–Alpert ionization gages
DEF Ionization vacuum gages using a tube with an electrode structure designed to minimize x ray induced electron emission from the ion collector.
GS measuring instruments
. pressure gages
. . vacuum gages
. . . ionization gages
. . . . **Bayard–Alpert ionization gages**
vacuum apparatus
. vacuum gages
. . ionization gages
. . . **Bayard–Alpert ionization gages**
RT hot cathodes

Bayes theorem
UF *Bayesian statistics*
GS theorems
. **Bayes theorem**
RT belief networks
quality control
sampling

Bayesian belief networks
USE **belief networks**

Bayesian statistics
USE **Bayes theorem**

bayous
DEF A term variously applied to many local water features in the lower Mississippi River basin and in the Gulf Coast region of the U.S., especially in Louisiana. Its general meaning is a creek of a secondary watercourse that is tributary to another body of water, especially through alluvial lowlands, coastal swamps or river deltas. The origin of the term is from the American French "boyau", "gut"; from the Choctaw "bayuk", "small stream".
GS landforms
. inlets (topography)
. . **bayous**
RT lakes
marshlands
rivers

∞ **bays**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bays (structural units)
bays (topographic features)

bays (structural units)
RT aircraft compartments
airframes
∞ bays
compartments
fuselages
hulls (structures)
shells (structural forms)

bays (topographic features)
DEF Wide, curving open indentations, recesses, or arms of seas or lakes into the land or between two capes or headlands; larger than coves, and usually smaller than, but of the same general character as gulfs. Used for bights and coves.
UF *bights*
coves
GS **bays (topographic features)**
. Chesapeake Bay (US)
. Delaware Bay (US)
. Hudson Bay (Canada)
. Monterey Bay (CA)
. Saginaw Bay (MI)
. San Francisco Bay (CA)
. San Pablo Bay (CA)
RT ∞ bays
estuaries
gulfs
inlets (topography)

BBGKY hierarchy
GS classifications
. hierarchies
. . **BBGKY hierarchy**
RT Bogoliubov theory
Boltzmann transport equation
equations of state
Fourier transformation
kinetic equations
plasma physics

BCAS
USE **Beacon Collision Avoidance System**

BCC lattices
USE **body centered cubic lattices**

BCH codes
UF *Bose–Chaudhuri–Hocquenghem codes*
RT binary codes
∞ codes
coding
computer programming
decoders
decoding
digital techniques
error correcting devices
information theory
parity
random errors

BCS theory
UF *Bardeen–Cooper–Schrieffer theory*
RT many body problem
superconductivity
∞ theories
thermodynamic coupling

BE A
USE **Beacon Explorer A**

BE B
USE **Explorer 22 satellite**

BE C
USE **Explorer 27 satellite**

BE–3 engine
GS engines
. rocket engines
. . retrorocket engines
. . . **BE–3 engine**
RT Athena rocket vehicle
Ranger lunar landing vehicles
solid propellant rocket engines

beaches
DEF Stretches of unconsolidated material that constitute gently sloping zones, typically with concave profiles, extending landward from the low–water line to the place where there is a definite change in material or physiographic form. Used for advancing shorelines, backshores, and inshore zones.
UF *advancing shorelines*
backshores
inshore zones
RT bars (landforms)
coastal currents
coastal plains
coasts
cusps (landforms)
dunes
lagoons
lakes
littoral drift
marine environments
shoals
shorelines
topography
waterfowl

Beacon Collision Avoidance System
UF *BCAS*
GS avoidance
. collision avoidance
. . **Beacon Collision Avoidance System**
RT air traffic control
aircraft safety
midair collisions
radio beacons
∞ systems
transponders

Beacon Explorer A
UF *BE A*
S–66 satellite
GS artificial satellites
. passive satellites
. . Beacon satellites
. . . **Beacon Explorer A**
expandable structures

. inflatable structures
. . inflatable spacecraft
. . . Beacon satellites
. . . . **Beacon Explorer A**
inflatable space structures
. inflatable spacecraft
. . Beacon satellites
. . . **Beacon Explorer A**
space erectable structures
. inflatable spacecraft
. . Beacon satellites
. . . **Beacon Explorer A**
RT Delta launch vehicle

Beacon Explorer B
USE **Explorer 22 satellite**

Beacon Explorer C
USE **Explorer 27 satellite**

Beacon satellites
UF *polar ionosphere beacon*
GS artificial satellites
. passive satellites
. . **Beacon satellites**
. . . Beacon Explorer A
. . . Explorer 22 satellite
expandable structures
. inflatable structures
. . inflatable spacecraft
. . . **Beacon satellites**
. . . . Beacon Explorer A
. . . . Explorer 22 satellite
inflatable space structures
. inflatable spacecraft
. . **Beacon satellites**
. . . Beacon Explorer A
. . . Explorer 22 satellite
space erectable structures
. inflatable spacecraft
. . **Beacon satellites**
. . . Beacon Explorer A
. . . Explorer 22 satellite
RT LOCATES system

beacons
DEF Lights, groups of lights, electronic apparatus, or other devices that guide, orient, or warn aircraft, spacecraft, etc. in flight.
GS navigation aids
. **beacons**
. . airport beacons
. . . discrete address beacon system
. . radar beacons
. . . discrete address beacon system
. . radio beacons
. . . omnidirectional radio ranges
. . . . self calibrating omnirange
. . radio direction finders
RT aircraft lights
buoys
compasses
homing
homing devices
instrument flight rules
∞ markers
position indicators
projectors
searchlights
∞ signals
solar compasses
visual signals

beads
RT spot welds
welded joints
welding

Beagle aircraft
RT ∞ aircraft

beam currents
DEF Currents incident on specimens by primary particle sources.
GS electric current
. **beam currents**
RT backward wave tubes
Brillouin flow
∞ currents
plasma currents

beam forming
USE **beamforming**

beam injection
DEF The introduction of a particle radiation beam into a plasma or ionized gas for the purpose of diagnostics, plasma control, or the study of beam/plasma interactions.
RT electron beams
ion beams
neutral beams
plasma heating
plasma–particle interactions
tokamak devices
toroidal plasmas

beam interactions
DEF A general term for interactions between various types of beams with each other or with plasmas or substances.
RT beams (radiation)
collision parameters
high energy interactions
∞ interactions
wave–particle interactions

beam leads
GS conductors
. electric conductors
. . **beam leads**
. flat conductors
. . **beam leads**
RT bonding
electric connectors
∞ joining
microelectronics
micromodules
soldered joints

beam neutralization
DEF Neutralization that takes place by means of charge exchange with a neutral gas.
RT beams (radiation)
electron beams
ion beams
neutral beams

beam plasma amplifiers
GS amplifiers
. **beam plasma amplifiers**
RT electron beams
millimeter waves
plasma–particle interactions
plasmas (physics)
relativistic electron beams

beam rider guidance
DEF System for guiding aircraft, spacecraft, or missiles, along a desired path by means of a radar beam, light beam, etc. The center of the beam axis forms a line along which the vehicle senses its location and corrects its course relative to the beam axis.
GS guidance (motion)
. **beam rider guidance**
RT missile control
missile systems

beam splitters
DEF Partially reflecting mirrors which permit some incident light to pass through and reflect the remainder.
RT beams (radiation)
particle accelerators
particle beams
scatter plates (optics)

beam steering
(added June 1997)
GS steering
. **beam steering**
RT antenna radiation patterns
beam waveguides
beamforming
beams (radiation)
collimation
laser beams
steerable antennas

beam switching
GS switching
. **beam switching**
RT beams (radiation)
electron optics
ion engines
lasers
magnetic switching
packet switching

beam waveguides
GS waveguides
. **beam waveguides**
RT beam steering
collimators
photon beams
plasmaguides
rectangular waveguides
wave propagation
yokes

beamed power
USE **power beaming**

beamforming
(added September 1992)
UF *beam forming*
beamshaping
GS collimation
. **beamforming**
RT antenna arrays
antenna radiation patterns
beam steering
beams (radiation)
laser beams
polarization (waves)
radar beams

∞ **beams**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT beams (radiation)
beams (supports)

beams (radiation)
GS **beams (radiation)**
. gamma ray beams
. light beams
. . laser beams
. microbeams
. particle beams
. . atomic beams
. . electron beams
. . . relativistic electron beams
. . ion beams

. . neutral beams
. . . molecular beams
. . . neutron beams
. . neutrino beams
. . pion beams
. . proton beams
. pencil beams
. phonon beams
. photon beams
. radar beams
RT beam interactions
beam neutralization
beam splitters
beam steering
beam switching
beamforming
∞ beams
coherent electromagnetic radiation
coherent radiation
corpuscular radiation
electromagnetic radiation
extreme ultraviolet radiation
infrared radiation
ionizing radiation
irradiation
light (visible radiation)
longitudinal waves
monochromatic radiation
multibeam antennas
plane waves
∞ radiation
∞ rays
submillimeter waves
ultraviolet radiation

beams (supports)
UF *structural beams*
GS structural members
. **beams (supports)**
. . box beams
. . cantilever beams
. . curved beams
. . I beams
. . rectangular beams
. . Timoshenko beams
RT ∞ beams
columns (supports)
girders
∞ headers
plastic bodies
T shape
trusses

beamshaping
USE **beamforming**

∞ **bearing**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bearing (direction)
bearings
internal combustion engines

bearing (direction)
RT alignment
azimuth
∞ bearing
∞ direction
direction finding
exposure
field of view
instrument orientation
∞ orientation
position (location)
sound localization
∞ space orientation

bearing alloys
GS alloys
. **bearing alloys**
RT aluminum alloys
babbitt metal
bearings
cadmium alloys
copper alloys
iron alloys
lead alloys
metal powder
silver alloys
tin alloys
zinc alloys

bearingless rotors
GS airfoils
. wings
. . rotary wings
. . . lifting rotors
. . . . **bearingless rotors**
rotating bodies
. rotors
. . rotary wings
. . . lifting rotors
. . . . **bearingless rotors**
RT hinges
rigid rotors

bearings
GS **bearings**
. antifriction bearings
. . ball bearings
. . roller bearings
. . . needle bearings
. foil bearings
. gas bearings
. journal bearings
. liquid bearings
. magnetic bearings
. thrust bearings
RT ∞ bearing
bearing alloys
boundary lubrication
bushings
gimbals
idlers
internal combustion engines
lubrication
packings (seals)
pivots
shafts (machine elements)
supports
suspension systems (vehicles)
swivels
wheels

bears
GS animals
. vertebrates
. . mammals
. . . **bears**

beat
USE **asynchronism**

beat frequencies
DEF The frequencies obtained when two simple harmonic quantities of different frequencies f1 and f2 are superimposed. The beat frequency equals f1–f2.
GS frequencies
. **beat frequencies**
RT group velocity
intermediate frequency amplifiers
Moire effects
resonant frequencies
standing waves
superheterodyne receivers

Beaufort Sea (North America)
GS seas
. **Beaufort Sea (North America)**
RT Alaska
Arctic Ocean
Canada

bed rest
GS rest
. **bed rest**
RT calcium metabolism
clinical medicine
head down tilt
orthostatic tolerance

bedding equipment
RT ∞ blankets
∞ equipment

bediasites
GS celestial bodies
. meteorites
. . stony meteorites
. . . tektites
. . . . **bediasites**
RT australites

bedrock
UF *shields (geology)*
GS rocks
. **bedrock**
. . Baltic Shield (Europe)
. . batholiths
RT Earth resources
geology
regolith
∞ shelves
soils
strata
stratification
stratigraphy
tunneling (excavation)

beds
RT beds (process engineering)
couches

beds (geology)
UF *lake beds*
GS geology
. **beds (geology)**
. . salt beds
landforms
. **beds (geology)**
. . salt beds
RT ocean bottom
strata
stratigraphy

beds (process engineering)
RT beds
chemical reactors
extraction
filtration
fluidized bed processors
ion exchanging
percolation

Beech 99 aircraft
DEF Light, low-wing aircraft manufactured by Beechcraft.
GS Beechcraft aircraft
. **Beech 99 aircraft**
. . Beechcraft 18 aircraft
. . C-33 aircraft
. . C-35 aircraft
light aircraft

. **Beech 99 aircraft**
. . Beechcraft 18 aircraft
. . C–33 aircraft
. . C–35 aircraft
RT ∞ aircraft
∞ low wing aircraft

Beech aircraft
USE **Beechcraft aircraft**

Beech C–33 aircraft
USE **C–33 aircraft**

Beech S–35 aircraft
USE **C–35 aircraft**

Beechcraft 18 aircraft
GS Beechcraft aircraft
. Beech 99 aircraft
. . **Beechcraft 18 aircraft**
general aviation aircraft
. **Beechcraft 18 aircraft**
light aircraft
. Beech 99 aircraft
. . **Beechcraft 18 aircraft**
monoplanes
. **Beechcraft 18 aircraft**
RT ∞ aircraft

Beechcraft aircraft
UF *Beech aircraft*
GS **Beechcraft aircraft**
. Beech 99 aircraft
. . Beechcraft 18 aircraft
. . C–33 aircraft
. . C–35 aircraft
RT ∞ aircraft

Beer law
RT absorptivity
Bouguer law
electromagnetic absorption
molecular absorption

bees
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **bees**
RT swarming

beetles
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . Coleoptera
. . . . . **beetles**
. . . . . tribolia
RT infestation

behavior
DEF The way in which an organism, organ, body, or substance acts in an environment or responds to excitation, as the behavior of steel under stress, or the behavior of an animal in a test.
GS **behavior**
. deconditioning
. human behavior
RT conditioning (learning)
diagnosis
education
extroversion
learning
migration
Skinner boxes

Belarus
(added August 1993)
GS nations
. **Belarus**
RT Europe

Belfast aircraft
USE **SC–5 aircraft**

Belgian Congo
USE **Democratic Republic of Congo**

Belgian space program
(added August 1990)
GS programs
. space programs
. . European space programs
. . . **Belgian space program**
RT Belgium

Belgium
GS nations
. **Belgium**
RT Belgian space program
Europe

belief networks
(added December 1994)
DEF Artificial intelligence technique for computing probabalistic information.
UF *Bayesian belief networks*
GS networks
. **belief networks**
RT artificial intelligence
Bayes theorem
computer techniques
expert systems
knowledge representation
neural nets
probability theory

Belize
UF *British Honduras*
GS nations
. **Belize**
RT Caribbean region
Caribbean Sea
Central America

Bell 214A helicopter
DEF Sixteen–seat utility helicopter manufactured by Bell Helicopter.
GS Bell aircraft
. **Bell 214A helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **Bell 214A helicopter**
RT ∞ aircraft
vertical takeoff aircraft

Bell aircraft
GS **Bell aircraft**
. AH–1S helicopter
. AH–1W helicopter
. AH–63 helicopter
. Bell 214A helicopter
. OH–4 helicopter
. OH–13 helicopter
. UH–1 helicopter
. V–22 aircraft
. X–1 aircraft
. X–2 aircraft
. X–5 aircraft
. X–14 aircraft
. X–22 aircraft
. XV–3 aircraft
. XV–15 aircraft
RT ∞ aircraft

Bellman theory
RT dynamic programming
optimization
∞ theories

bellows
SN (EXPANDABLE JOINTS—FOR DEVICES TO MOVE GASES, USE BLOWERS)
DEF Mechanical structures with walls like those of an accordion.
GS expandable structures
. **bellows**
RT expulsion bladders
joints (junctions)
pumps

bells
RT auditory signals
pressure vessels
psychoacoustics
∞ **signals**
sound generators
warning
warning systems

Beltrami flow
GS fluid flow
. **Beltrami flow**
RT incompressible flow
steady flow
vorticity

∞ **belts**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT asteroid belts
cables (ropes)
fasteners
girdles
proton belts
pulleys
radiation belts
regions
Rouse belts
seat belts
terrestrial dust belt

Benard cells
GS convection
. free convection
. . Rayleigh–Benard convection
. . . **Benard cells**
fluid flow
. convective flow
. . Rayleigh–Benard convection
. . . **Benard cells**
RT convection currents
convection–diffusion equation
Rayleigh number
solar convection (astronomy)
solar granulation
stellar convection

benches
USE **seats**

bend tests
DEF Ductility tests in which specimens are bent through an arc of known radius and angle.
RT bending
crack propagation
destructive tests
flexural strength
fracture mechanics
fracture strength
∞ materials tests
∞ tests

bending
GS **bending**
. elastic bending
RT bend tests
∞ bows
buckling
camber
deflection
deformation
displacement
distortion
elastic deformation
fatigue tests
fiber strength
flexibility
flexing
flutter
folding
heaving
modulus of elasticity
plastic deformation
stiffness
structural failure
structural strain
temperature inversions
twisting
warpage

bending diagrams
GS diagrams
. **bending diagrams**
RT deflection

bending fatigue
GS fatigue (materials)
. **bending fatigue**
RT flexural strength
metal fatigue
S-N diagrams

bending moments
GS moments
. **bending moments**
RT loading moments
NASTRAN
static loads
stress analysis
structural design criteria
torque

bending strength
USE **flexural strength**

bending theory
RT stress analysis
stress intensity factors
∞ theories

bending vibration
GS vibration
. structural vibration
. . **bending vibration**
RT breathing vibration
flutter
missile vibration
panel flutter
random vibration
self induced vibration

bends (physiology)
USE **decompression sickness**

beneficiation
RT ∞ absorption
adsorption
aeration
clean fuels
comminution
concentrating
∞ conditioning
enrichment
exploitation
extraction
filtration
flotation
foaming
isotopic enrichment
leaching
∞ metallurgy
minerals
purification
refining
∞ separation
settling
size separation
sublimation
upgrading
washing
wastes

Benin
UF *Dahomey*
GS nations
. **Benin**
RT Africa

bentonite
DEF A soft, plastic, porous, light colored rock composed essentially of clay minerals of the montmorillonite group plus colloidal silica, and produced by divitrification and chemical alteration of a glassy igneous material, usually a tuff or a volcanic ash.
RT montmorillonite
soils
water treatment

benzene
GS organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . **benzene**
. hydrocarbons
. . cyclic hydrocarbons
. . . **benzene**
RT chlorobenzenes
cyclohexane
solvent refined coal
thiophenes

benzene poisoning
GS diseases
. toxic diseases
. . **benzene poisoning**
toxicity
. **benzene poisoning**
RT hydrocarbon poisoning
industrial safety
∞ poisoning
toxicity and safety hazard
toxicology

benzilic acid
GS acids
. carboxylic acids
. . fatty acids
. . . **benzilic acid**
organic compounds
. carboxylic acids
. . fatty acids
. . . **benzilic acid**

benzoic acid
GS acids
. carboxylic acids
. . fatty acids
. . . **benzoic acid**
organic compounds
. carboxylic acids
. . fatty acids
. . . **benzoic acid**

benzoquinone
USE **quinones**

Berenice rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . **Berenice rocket vehicle**
RT hypersonic reentry
solid propellant rocket engines

Bergman operator
GS operators (mathematics)
. **Bergman operator**

Bering Sea
GS seas
. **Bering Sea**
RT Pacific Ocean

berkelium
GS chemical elements
. actinide series
. . transuranium elements
. . . **berkelium**
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . **berkelium**
metals
. actinide series
. . transuranium elements
. . . **berkelium**

Bermuda
GS landforms
. islands
. . **Bermuda**
RT Atlantic Ocean

Bernoulli equation
USE **Bernoulli theorem**

Bernoulli theorem
DEF In aeronautics, a law or theorem stating that in a flow of incompressible fluid the sum of the static pressure and the dynamic pressure along a streamline is constant if gravity and frictional effects are disregarded. It is named for Daniel Bernoulli, a Swiss scientist who lived from 1700 to 1782. Used for Bernoulli equation.
UF *Bernoulli equation*
GS theorems
. **Bernoulli theorem**
RT conservation equations
∞ equations
flow equations
fluid flow
isentropic processes
linearization
Magnus effect
panel method (fluid dynamics)

Bernstein energy principle
GS structural analysis
. energy methods
. . **Bernstein energy principle**
RT ∞ energy
magnetic fields

beryl
UF *emerald*
GS aluminum compounds

. beryl
. . alexandrite
beryllium compounds
. beryl
. . alexandrite
minerals
. beryl
. . alexandrite
silicon compounds
. silicates
. . beryl
. . . alexandrite
RT beryllium

beryllium
GS chemical elements
. **beryllium**
. . beryllium isotopes
. . . beryllium 7
. . . beryllium 9
. . . beryllium 10
metals
. **beryllium**
. . beryllium isotopes
. . . beryllium 7
. . . beryllium 9
. . . beryllium 10
RT beryl
moderators

beryllium 10
GS chemical elements
. beryllium
. . beryllium isotopes
. . . **beryllium 10**
. nuclides
. . isotopes
. . . beryllium isotopes
. . . . **beryllium 10**
. . . radioactive isotopes
. . . . **beryllium 10**
metals
. beryllium
. . beryllium isotopes
. . . **beryllium 10**

beryllium 7
GS chemical elements
. beryllium
. . beryllium isotopes
. . . **beryllium 7**
. nuclides
. . isotopes
. . . beryllium isotopes
. . . . **beryllium 7**
. . . radioactive isotopes
. . . . **beryllium 7**
metals
. beryllium
. . beryllium isotopes
. . . **beryllium 7**

beryllium 9
GS chemical elements
. beryllium
. . beryllium isotopes
. . . **beryllium 9**
. nuclides
. . isotopes
. . . beryllium isotopes
. . . . **beryllium 9**
. . . radioactive isotopes
. . . . **beryllium 9**
metals
. beryllium
. . beryllium isotopes
. . . **beryllium 9**

beryllium alloys
GS alloys
. light alloys
. . **beryllium alloys**

beryllium borohydrides
GS beryllium compounds
. **beryllium borohydrides**
boron compounds
. borohydrides
. . **beryllium borohydrides**
. boron hydrides
. . **beryllium borohydrides**
hydrogen compounds
. hydrides
. . borohydrides
. . . **beryllium borohydrides**
. . boron hydrides
. . . **beryllium borohydrides**

beryllium chlorides
GS beryllium compounds
. **beryllium chlorides**
halogen compounds
. chlorine compounds
. . chlorides
. . . **beryllium chlorides**
. halides
. . chlorides
. . . **beryllium chlorides**
. . metal halides
. . . **beryllium chlorides**

beryllium compounds
GS **beryllium compounds**
. beryl
. . alexandrite
. beryllium borohydrides
. beryllium chlorides
. beryllium fluorides
. beryllium hydrides
. beryllium nitrides
. beryllium oxides
. . alexandrite
RT ∞ alkaline earth compounds
∞ chemical compounds
∞ metal compounds
metal fuels
metal propellants

beryllium fluorides
GS beryllium compounds
. **beryllium fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **beryllium fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **beryllium fluorides**
. . metal halides
. . . metal fluorides
. . . . **beryllium fluorides**

beryllium hydrides
GS beryllium compounds
. **beryllium hydrides**
hydrogen compounds
. hydrides
. . metal hydrides
. . . **beryllium hydrides**

beryllium isotopes
GS chemical elements
. beryllium
. . **beryllium isotopes**
. . . beryllium 7
. . . beryllium 9
. . . beryllium 10
. nuclides
. . isotopes
. . . **beryllium isotopes**
. . . . beryllium 7
. . . . beryllium 9
. . . . beryllium 10
metals
. beryllium
. . **beryllium isotopes**
. . . beryllium 7
. . . beryllium 9
. . . beryllium 10

beryllium nitrides
GS beryllium compounds
. **beryllium nitrides**
nitrogen compounds
. nitrides
. . metal nitrides
. . . **beryllium nitrides**

beryllium oxides
GS beryllium compounds
. **beryllium oxides**
. . alexandrite
chalcogenides
. oxides
. . metal oxides
. . . alkaline earth oxides
. . . . **beryllium oxides**
. . . . . alexandrite

beryllium poisoning
GS diseases
. toxic diseases
. . **beryllium poisoning**
toxicity
. **beryllium poisoning**
RT industrial safety
∞ poisoning
respiratory diseases
toxicity and safety hazard
toxicology

BESS (satellite)
DEF A proposed NASA primate biomedical experiment scientific satellite that was never developed. Used for biomedical experiment scientific satellite.
UF *Biomedical Experiment Scientific Satellite*
GS artificial satellites
. **BESS (satellite)**
RT multimission modular spacecraft
space shuttles

Bessel functions
GS analysis (mathematics)
. complex variables
. . **Bessel functions**
. . . Hankel functions
. real variables
. . **Bessel functions**
. . . Hankel functions
RT boundary value problems
differential equations
hypergeometric functions
orthogonal functions
power series

Bessel–Bredichin theory
RT comets
Kohoutek comet
radiation pressure
∞ theories

beta factor
DEF In plasma physics, the ratio of the plasma kinetic pressure to the magnetic pressure.
RT dense plasmas
fluid pressure
fusion reactors
magnetic fields
magnetic flux
magnetohydrodynamic stability
plasma control
plasma equilibrium
plasma heating
plasma physics
pressure effects
reactor physics
tokamak devices
toroidal plasmas

beta interactions
USE **weak interactions (field theory)**

beta particles
DEF Particles emitted in the radioactive decay of many radionuclides. A beta particle is identical to an electron. It has a short range in air and a low ability to penetrate other materials.
GS ionizing radiation
. **beta particles**
nuclear radiation
. **beta particles**
particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **beta particles**
. corpuscular radiation
. . electron radiation
. . . **beta particles**
. . energetic particles
. . . plasmas (physics)
. . . . **beta particles**
. elementary particles
. . **beta particles**
. nuclear particles
. . **beta particles**
RT decay
electron beams
electrons
flux (rate)
hot atoms
N electrons
relativistic electron beams
weak energy interactions

betaines
GS bases (chemical)
. alkaloids
. . **betaines**
nitrogen compounds
. alkaloids
. . **betaines**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . alkaloids
. . . . **betaines**

betatrons
DEF Particle accelerators in which magnetic induction is used to accelerate electrons.
GS particle accelerators
. cyclic accelerators
. . **betatrons**
. electron accelerators
. . **betatrons**
RT microtrons
synchrotrons

Bethe–Heitler formula
GS mathematical logic
. formulas (mathematics)
. . **Bethe–Heitler formula**

Bethe–Salpeter equation
GS analysis (mathematics)
. real variables
. . **Bethe–Salpeter equation**
RT differential equations
∞ equations
equations of motion
kinetic equations
quantum mechanics

bevatron
GS particle accelerators
. cyclic accelerators
. . synchrotrons
. . . **bevatron**
RT synchrocyclotrons

beverages
GS liquids
. potable liquids
. . **beverages**
. . . wines
RT coffee
drinking
∞ food
milk

BGK model
(added September 1993)
UF *Bhatnagar–Grass–Krook model*
GS models
. mathematical models
. . **BGK model**
RT Boltzmann transport equation
computational fluid dynamics
kinetic equations
kinetic theory
Knudsen flow
molecular collisions
molecular flow
particle collisions
rarefied gas dynamics

Bhatnagar–Grass–Krook model
USE **BGK model**

Bhutan
GS nations
. **Bhutan**
RT Himalayas
India
Sikkim
Tibet

Bi–Sr–Ca–Cu–O superconductors
USE **BSCCO superconductors**

bias
DEF A constant or systematic error as opposed to a random error. It manifests itself as a persistent positive or negative deviation of the method average from the accepted reference value.
GS **bias**
. response bias
RT compensators
displacement
electric potential
errors
instrument errors
open circuit voltage
tube grids

bibliographies
GS documents
. **bibliographies**
RT abstracts
biography
documentation
general overviews
handbooks
indexes (documentation)
information dissemination
information retrieval
libraries
literature
∞ reference systems
space glossaries
summaries

bicarbonates
USE **carbonates**

bicrystals
GS crystals
. **bicrystals**
RT polycrystals
single crystals

∞ **bicycle**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT landing gear
surface vehicles

bidirectional reflectance
GS electromagnetic properties
. optical properties
. . reflectance
. . . **bidirectional reflectance**
RT light scattering
reflection
spectral reflectance
surface properties

bifurcation (biology)
DEF The separation or branching into two parts, areas, aspects or connected segments, of anatomical systems or functions.
RT anatomy
arteries
∞ biology
blood vessels
branching (physics)
veins

bifurcation (mathematics)
USE **branching (mathematics)**

big bang cosmology
GS cosmology
. **big bang cosmology**
RT astronomical models
background radiation
cosmic rays
galactic evolution
gamma ray bursts
grand unified theory
gravitational constant
relativity
relic radiation
universe

Bighorn Mountains (MT–WY)
GS landforms
. mountains
. . **Bighorn Mountains (MT–WY)**
RT Montana
Wyoming

bights
USE **bays (topographic features)**

biharmonic equations
GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **biharmonic equations**
RT elastic properties
∞ equations

billets
RT casting
castings
forging
ingots
metal plates
metal strips
rods
slabs
wire

bimetals
RT alloying
alloys
composite materials
functionally gradient materials
metal bonding
metals

bimetric theories
DEF Theories of gravitation.
RT gravitation theory
metric space
Schwarzschild metric
∞ theories

binary alloys
GS alloys
. **binary alloys**
binary systems (materials)
. **binary alloys**
RT alloying
cluster variation method

binary codes
DEF Codes composed of a combination of entities each of which can assume one of two possible states. Each entity must be identifiable in time or space.
RT BCH codes
bit error rate
∞ codes
concatenated codes
digital systems
trellis coding

binary data
RT analog data
bit error rate
bubble memory devices
∞ data
data processing
decimal to binary converters
digital data

binary digits
GS symbols
. alphanumeric characters
. . digits
. . . **binary digits**
RT bit error rate
bits
digital electronics
digital systems

binary fluids
GS binary systems (materials)
. binary mixtures
. . **binary fluids**
mixtures
. binary mixtures
. . **binary fluids**
RT∞ fluids
gas mixtures
kinetic theory
Lennard–Jones gas
transport properties

binary integration
GS analysis (mathematics)
. real variables
. . measure and integration
. . . **binary integration**
RT adding circuits
digital integrators

binary mixtures
GS binary systems (materials)
. **binary mixtures**
. . binary fluids
. . eutectics
. . . eutectic alloys
mixtures
. **binary mixtures**
. . binary fluids
. . eutectics
. . . eutectic alloys
RT azeotropes
gas mixtures
liquid–gas mixtures

binary phase shift keying
(added February 1992)
UF *biphase shift keying*
BPSK
GS coding
. signal encoding
. . phase modulation
. . . phase shift keying
. . . . **binary phase shift keying**
keying
. phase shift keying
. . **binary phase shift keying**
modulation
. phase modulation
. . phase shift keying
. . . **binary phase shift keying**
RT quadrature phase shift keying
satellite transmission

binary stars
DEF Systems of two stars revolving about a barycenter.
GS celestial bodies
. stars
. . double stars
. . . **binary stars**
. . . . cataclysmic variables
. . . . companion stars
. . . . Nemesis (star)
. . . . eclipsing binary stars
. . . . . dwarf novae
. . . . . Lambda Tauri stars
. . . . . Zeta Aurigae star
. . . . Sigma Orionis
. . . . symbiotic stars
. . . . x ray binaries
RT accretion disks
gravitational binding energy
limb darkening
star clusters
stellar parallax
stellar systems
triple stars
two body problem
variable stars

binary summators
USE **adding circuits**

binary systems (digital)
USE **digital systems**

binary systems (materials)
UF *two phase systems*
GS **binary systems (materials)**
. binary alloys
. binary mixtures
. . binary fluids
. . eutectics
. . . eutectic alloys
RT alloys
∞ materials
phase diagrams
phase separation (materials)
solidus
∞ systems
ternary systems

binary to decimal converters
GS data converters
. **binary to decimal converters**
RT computer components
∞ converters
data processing
decimal to binary converters

binaural hearing
GS hearing
. **binaural hearing**
perception
. **binaural hearing**
RT auditory perception
sound localization
Weber test

binders (adhesives)
USE **adhesives**

binders (materials)
GS **binders (materials)**
. propellant binders
. . solid rocket binders
RT additives
adhesives
cements
∞ materials
molding materials
oxetane polymers
sizing materials
solid lubricants

binding
RT binding energy
bonding
collating
folding
∞ joining
printing
sealing
sewing

binding energy
(added May 1995)
GS **binding energy**
. gravitational binding energy
. nuclear binding energy
RT activation energy
binding
chemical bonds
electrostatic bonding
∞ energy
quantum wells

vacancies (crystal defects)

binocular vision
GS vision
. **binocular vision**
RT haploscopes
motion perception
space perception
stereoscopic vision

binoculars
GS optical equipment
. **binoculars**
RT eyepieces
microscopes
periscopes
telescopes

binomial coefficients
GS analysis (mathematics)
. combinatorial analysis
. . **binomial coefficients**
coefficients
. **binomial coefficients**
RT factorials

binomial theorem
GS algebra
. **binomial theorem**
theorems
. **binomial theorem**
RT binomials
probability density functions
probability theory
statistical analysis
statistical distributions

binomials
GS algebra
. polynomials
. . **binomials**
RT binomial theorem

bioacoustics
GS acoustics
. **bioacoustics**
RT acoustic attenuation
auditory defects
auditory sensation areas
bioengineering
∞ biology
psychoacoustics
∞ science
sound intensity

bioassay
DEF A standardized procedure for the determination of the effects of an environmental variable or substance on living organisms. Used for biological analysis.
UF *biological analysis*
RT biochemistry
biological diversity
biological effects
∞ biology
histochemical analysis

Bioastronautical Orbital Space System
GS programs
. NASA programs
. . NASA space programs
. . . **Bioastronautical Orbital Space System**
. space programs
. . NASA space programs
. . . **Bioastronautical Orbital Space System**
RT ∞ systems

bioastronautics
DEF The study of biological, behavioral, and medical problems pertaining to astronautics. This includes systems functioning in the environments expected to be found in space, vehicles designed to travel in space, and the conditions on terrestrial bodies other than the Earth.
RT aerospace environments
aerospace medicine
∞ astronautics
bioengineering
∞ biology
Biosatellite 1
Biosatellite 2
Biosatellite 3
closed ecological systems
Columbus space station
Earth atmosphere
exobiology
head down tilt
lunar environment
planetary environments
∞ science
space adaptation syndrome
space exploration
space flight
space stations
spacecraft environments

biochemical fuel cells
GS electric generators
. direct power generators
. . fuel cells
. . . **biochemical fuel cells**
electrochemical cells
. fuel cells
. . **biochemical fuel cells**
RT ∞ biology
phosphoric acid fuel cells
regenerative fuel cells

biochemical oxygen demand
DEF The amount of oxygen necessary for the oxidative decomposition of a material by microorganisms. The amount of oxygen consumed in mg/l of water (or waste water) over a period of 5 days at 20 deg. C under laboratory conditions. Used for BOD.
UF *BOD*
RT **algae**
∞ biology
ecology
oximetry
oxygen consumption
plants (botany)
pollution control
water pollution
water treatment

biochemistry
DEF Chemistry dealing with the chemical processes and compounds of living organisms.
GS **biochemistry**
. biogeochemistry
. enzymology
. physiochemistry
RT bacteriology
bioassay
biodegradation
bioengineering
∞ biology
chemical warfare
∞ chemistry
cytology
Gaia hypothesis
genetic engineering
histochemical analysis
immunoassay
interferon
marine chemistry
metabolites
molecular biology
mutagens
nitrogen metabolism
nutrition
optical activity
organic chemistry
radioimmunoassay
vegetation growth

bioclimatology
USE **biometeorology**

biocompatibility
DEF Compatibility of substances with living tissues and blood components.
GS compatibility
. **biocompatibility**
RT antibodies
antigens
∞ biology
blood
immunology
leukocytes
physiological defenses
vaccines

biocontrol systems
SN (RESTRICTED TO ARTIFICIAL BIOTECHNOLOGICAL SYSTEMS FOR THE CONTROL OF BIOLOGICAL PROCESSES—USE REGULATORY MECHANISMS (BIOLOGY) FOR NATURAL PHYSIOLOGICAL REGULATION)
RT biofeedback
∞ biology
bionics
psychomotor performance
regulatory mechanisms (biology)
∞ systems
tolerances (physiology)

bioconversion
DEF The transformation of algae and/or other biomass materials in successive stages to aliphatic organic acids to aliphatic hydrocarbons to diesel and/or other liquid fuels.
RT **algae**
∞ biology
biomass energy production
bioprocessing
∞ conversion
enzyme activity
fermentation
fuels
hydrocarbon fuel production
methane
solar heating
vegetation

biodegradability
DEF The characteristic of a substance that can be decomposed by microorganisms.
GS dissociation
. **biodegradability**
RT ∞ biology
decay
decomposition
deterioration
organic materials
∞ properties

biodegradation
GS degradation
. **biodegradation**
RT activated sludge

biochemistry
∞ biology
decay
decomposition
deterioration

biodiversity
USE **biological diversity**

biodynamics
DEF The study of the effects of dynamic processes (motion, acceleration, weightlessness, etc.) on living organisms. Used for biomechanics.
UF *biomechanics*
RT anatomy
bioengineering
biological models (mathematics)
∞ biology
biophysics
∞ dynamics
∞ science
stress (physiology)

bioelectric potential
GS potential energy
. **electric potential**
. . **bioelectric potential**
RT bioelectricity
∞ biology

bioelectricity
UF *neuron transmission*
RT bioelectric potential
∞ biology
biomagnetism
information processing (biology)
neuromuscular transmission
spike potentials

bioengineering
GS **bioengineering**
. bioinstrumentation
. . biotelemetry
. . implanted electrodes (biology)
. biometrics
. . body measurement (biology)
. . . anthropometry
. . . electroplethysmography
. . cardiography
. . . ballistocardiography
. . . electrocardiography
. . . magnetocardiography
. . . phonocardiography
. . . . echocardiography
. . . seismocardiography
. . . vectorcardiography
. . echoencephalography
. . electroencephalography
. . electromyography
. . electronystagmography
. . electroretinography
. . plethysmography
. . . electroplethysmography
. . radiocardiography
RT bioacoustics
biceastronautics
biochemistry
biodynamics
∞ biology
bionics
biopaks
biophysics
bone mineral content
∞ engineering
genetic engineering
human factors engineering
underwater breathing apparatus
voice control

biofeedback
DEF Originally confined to the presenting of a subject with sensory information about ongoing physiological activities, it now includes the controlling of specific physiological activities through trained mental effort.
GS feedback
. **biofeedback**
. . sensory feedback
RT aerospace medicine
biocontrol systems
blood pressure
conditioning (learning)
∞ control
feedback control
heart rate
human factors engineering
psychology

bioflavonoids
UF *vitamin P*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **bioflavonoids**
vitamins
. **bioflavonoids**
RT drugs

biogenesis
USE **biological evolution**

biogeny
RT ∞ biology
∞ evolution
ontogeny

biogeochemistry
GS biochemistry
. **biogeochemistry**
environmental chemistry
. geochemistry
. . **biogeochemistry**
RT ∞ biology
botany
∞ chemistry
geobotany
International Geosphere–Biosphere program
minerals
plants (botany)

biography
GS literature
. **biography**
RT awards
bibliographies
case histories
documentation

bioinstrumentation
UF *biosensors*
GS bioengineering
. **bioinstrumentation**
. . biotelemetry
. . implanted electrodes (biology)
RT ∞ biology
biometrics
bionics
echoencephalography
∞ engineering
IMBLMS
∞ instruments
magnetocardiography
measuring instruments
respirometers
∞ sensors
sphygmography
wildlife radiolocation

biological activity
USE **activity (biology)**

biological analysis
USE **bioassay**

biological cells
USE **cells (biology)**

biological clocks
USE **rhythm (biology)**

biological diversity
(added June 1995)
DEF The diversity of genes, species, and ecosystems that make up the variety and variability of life.
UF *biodiversity*
genetic diversity
RT bioassay
biological evolution
biosynthesis
cytology
deforestation
differentiation (biology)
gene expression
genetics
mutations
protobiology
species diffusion

biological effects
GS **biological effects**
. desynchronization (biology)
. jet lag
. relative biological effectiveness (RBE)
RT activity (biology)
atrophy
bioassay
∞ biology
biomedical data
bone demineralization
Bragg curve
chemical effects
disorientation
dosage
∞ effects
flight stress (biology)
human reactions
Orbiting Frog Otolith
pathological effects
physiological effects
psychological effects
radiation dosage
radiation effects
space adaptation syndrome
temperature
thermal pollution

biological evolution
UF *biogenesis*
GS evolution (development)
. **biological evolution**
. . abiogenesis
RT archaebacteria
biological diversity
∞ biology
chemical evolution
eukaryotes
Gaia hypothesis
gene expression
genetics
life sciences
mutagens
mutations
panspermia

prokaryotes
protein synthesis
protobiology

biological models
USE **bionics**

biological models (mathematics)
DEF Mathematical models for living systems.
GS models
. mathematical models
. . **biological models (mathematics)**
RT biodynamics
∞ biology
bionics
digital simulation
dynamic models

biological rhythm
USE **rhythm (biology)**

∞ **biology**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT activation (biology)
activity (biology)
activity cycles (biology)
aerobiology
aerospace medicine
aging (biology)
agriculture
anatomy
animals
bacteriology
bifurcation (biology)
bioacoustics
bioassay
bioastronautics
biochemical fuel cells
biochemical oxygen demand
biochemistry
biocompatibility
biocontrol systems
bioconversion
biodegradability
biodegradation
biodynamics
bioelectric potential
bioelectricity
bioengineering
biogeny
biogeochemistry
bioinstrumentation
biological effects
biological evolution
biological models (mathematics)
bioluminescence
biomagnetism
biomass
biomass energy production
biomedical data
biometeorology
biometrics
bionics
biophysics
bioreactors
biosatellites
biosphere
biosynthesis
biotechnology
biotelemetry
body composition (biology)
body measurement (biology)
body size (biology)
body volume (biology)
bone demineralization
bone mineral content
botany
carbon cycle
cells (biology)
complement (biology)
cytogenesis
cytology
differentiation (biology)
ecology
embryology
evolution (development)
exobiology
fatigue (biology)
flight stress (biology)
genetic engineering
genetics
habitats
immunology
implanted electrodes (biology)
interferon
life sciences
marine biology
medical science
microbiology
molecular biology
morphology
nitrogen metabolism
paleobiology
protobiology
radiobiology
relative biological effectiveness (RBE)
reproduction (biology)
rhythm (biology)
∞ science
skin temperature (biology)
tissues (biology)
veterinary medicine

bioluminescence
GS emission
. light emission
. . luminescence
. . . **bioluminescence**
RT ∞ biology
phosphorescence

biomagnetism
DEF Magnetic fields surrounding parts or the whole of a living biological system; also, the effects of magnetism on parts or the whole of a biological entity.
GS magnetic fields
. **biomagnetism**
magnetic properties
. **biomagnetism**
RT bioelectricity
∞ biology
biophysics
electromagnetic fields
electromagnetic interactions
radiobiology

biomass
DEF The dry weight of living matter in a given area expressed in terms of mass or weight per unit of volume or area.
GS weight (mass)
. **biomass**
RT animals
∞ biology
carbon cycle
∞ density
organisms
plants (botany)
populations
silviculture
∞ weight

biomass energy production
GS energy conversion
. **biomass energy production**
RT bioconversion
∞ biology
bioreactors
∞ crops
∞ energy sources
energy technology
hydrocarbon fuel production
manures
methanation
vegetation
waste utilization

biomechanics
USE **biodynamics**

biomedical data
RT aerospace medicine
biological effects
∞ biology
biometrics
body measurement (biology)
cardiograms
∞ data
heart rate
IMBLMS

Biomedical Experiment Scientific Satellite
USE **BESS (satellite)**

biometeorology
UF *bioclimatology*
GS meteorology
. **biometeorology**
RT ∞ biology
coastal ecology
coastal plains
ecology
microclimatology
nightglow
phenology

biometrics
GS bioengineering
. **biometrics**
. . body measurement (biology)
. . . anthropometry
. . . electroplethysmography
. . cardiography
. . . ballistocardiography
. . . electrocardiography
. . . magnetocardiography
. . . phonocardiography
. . . . echocardiography
. . . seismocardiography
. . . vectorcardiography
. . echoencephalography
. . electroencephalography
. . electromyography
. . electronystagmography
. . electroretinography
. . plethysmography
. . . electroplethysmography
. . radiocardiography
RT bioinstrumentation
∞ biology
biomedical data
bone mineral content
∞ engineering
Orbiting Frog Otolith
pupillometry
statistical analysis
∞ statistics

bionics
DEF The study of systems, particularly electronic systems, which function after the manner characteristic of, or resembling living systems. Used for biological models and biosimulation.
UF *biological models*
biosimulation
RT artificial intelligence
automata theory
biocontrol systems
bioengineering
bioinstrumentation
biological models (mathematics)
∞ biology
control systems design
cybernetics
human factors engineering
man machine systems
neuristors
rheoelectrical simulation
robots
simulation
syncoders
systems engineering

biopaks
GS support systems
. life support systems
. . **biopaks**
RT bioengineering
biosatellites
∞ containers
enclosures
portable life support systems
preserving

biophysics
GS **biophysics**
. health physics
. . public health
RT biodynamics
bioengineering
∞ biology
biomagnetism
∞ physics
∞ science

biopolymer denaturation
UF *denaturation (biopolymers)*
nucleic acid denaturation
protein denaturation
RT biopolymers
molecular structure
nucleic acids
polymer chemistry
proteins

biopolymers
GS **biopolymers**
. nucleic acids
. . deoxyribonucleic acid
. . ribonucleic acids
. proteins
. . albumins
. . aspartates
. . calmodulin
. . elastin
. . enzymes
. . . aldolase
. . . amidase
. . . carbonic anhydrase
. . . catalase
. . . cholinesterase
. . . cytochromes
. . . hexokinase
. . . lysozyme
. . . nuclease
. . . oxidase
. . . papain
. . . pepsin
. . . protease
. . . thrombin
. . . trypsin
. . fibrin
. . globulins
. . . fibrinogen
. . . gamma globulin
. . hemoglobin
. . . carboxyhemoglobin
. . . oxyhemoglobin
. . keratins
. . lipoproteins
. . melanin
. . myoglobin
. . proteinoids
. . prothrombin
. . protoproteins
RT biopolymer denaturation
nucleotides
∞ polymers
polynucleotides
polypeptides

bioprocessing
RT aerospace environments
bioconversion
biotechnology
electrophoresis
microgravity
∞ microgravity applications
pharmacology
space processing
spaceborne experiments
weightlessness

bioreactors
DEF Biological processors to remove or produce certain chemicals or a particular chemical.
RT∞ biology
biomass energy production
biotechnology

bioregeneration
USE **regeneration (physiology)**

bioregenerative life support systems
USE **closed ecological systems**

biorhythms
USE **rhythm (biology)**

BIOS project
GS programs
. projects
. . **BIOS project**

Biosatellite 1
GS artificial satellites
. biosatellites
. . **Biosatellite 1**
RT bioastronautics

Biosatellite 2
GS artificial satellites
. biosatellites
. . **Biosatellite 2**
RT bioastronautics

Biosatellite 3
GS artificial satellites
. biosatellites
. . **Biosatellite 3**
RT∞ astronautics
bioastronautics

biosatellites
SN (EXCLUDES MANNED SPACECRAFT)
DEF Artificial satellites which are specifically designed to contain and support man, animals, or other living material in a reasonably normal manner for an adequate period of time and which, particularly for man and animals, posesses the proper means for safe return to the Earth.
GS artificial satellites
. **biosatellites**
. . **Biosatellite 1**
. . **Biosatellite 2**
. . **Biosatellite 3**
. . Orbiting Frog Otolith
. . Sputnik 2 satellite
RT aerospace environments
∞ biology
biopaks
environmental control
extraterrestrial life
life detectors
life support systems
manned spacecraft
space capsules
∞ spacecraft

biosensors
USE **bioinstrumentation**

biosimulation
USE **bionics**

biosphere
DEF That transition zone between Earth and atmosphere within which most forms of terrestrial life are commonly found; the outer portion of the geosphere and inner or lower portion of the atmosphere.
RT∞ biology
chemosphere
Earth hydrosphere
free atmosphere
Gaia hypothesis
homosphere
International Geosphere–Biosphere program
lower atmosphere

biosynthesis
RT biological diversity
∞ biology
chemical reactions
genetic engineering
metabolites
prostaglandins
∞ synthesis
synthetic food

Biot method
RT calculus of variations
∞ methodology

Biot number
DEF A standard heat transfer dimensionless number.
GS dimensionless numbers
. **Biot number**
ratios
. **Biot number**
RT heat transfer
∞ numbers

biotechnology
DEF The application of engineering and technological principles to the life sciences.
GS technologies
. **biotechnology**
RT artificial cardiac pacemaker

artificial heart valves
∞ biology
bioprocessing
bioreactors
blood pumps
cloning (biology)
heart implantation
man machine systems

biotelemetry
DEF The remote sensing and evaluation of life functions, as, e.g., in spacecraft and artificial satellites. Used for physiological telemetry.
UF *physiological telemetry*
GS bioengineering
. bioinstrumentation
. . **biotelemetry**
telecommunication
. telemetry
. . **biotelemetry**
transmission
. signal transmission
. . telemetry
. . . **biotelemetry**
RT ∞ biology
communication equipment
∞ engineering
Orbiting Frog Otolith
pneumography
telemedicine
wildlife radiolocation

biotin
UF *vitamin B complex*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **biotin**
vitamins
. biotin
RT drugs

biotite
DEF A widely distributed and important rock-forming mineral of the mica group. Used for kimberlite.
UF *kimberlite*
GS minerals
. mica
. . **biotite**

biphase shift keying
USE **binary phase shift keying**

biplanes
GS **biplanes**
. AN-2 aircraft
RT ∞ aircraft
dual wing configurations
light aircraft
monoplanes
tandem wing aircraft
utility aircraft

bipolar transistors
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . transistors
. . . . **bipolar transistors**
RT bipolarity
carrier injection
epitaxy
majority carriers
minority carriers
n-p-n junctions
semiconductors (materials)

bipolarity
DEF Capability of assuming negative or positive values.
RT bipolar transistors
∞ polarization

bipropellants
USE **liquid rocket propellants**

bird-aircraft collisions
GS accidents
. aircraft accidents
. . **bird-aircraft collisions**
collisions
. midair collisions
. . **bird-aircraft collisions**
RT ∞ aircraft
aircraft hazards
birds
flight hazards
ingestion (engines)

birds
GS animals
. vertebrates
. . **birds**
. . . chickens
. . . pigeons
. . . turkeys
. . . waterfowl
RT aircraft hazards
bird-aircraft collisions
Earth resources
endangered species
flight hazards
homeotherms
plumage
wildlife

birefringence
DEF A double-refraction phenomenon in which an unpolarized beam of light is divided into two beams with different directions and relative velocities of propagation. The amount of energy transmitted along an optical path through a crystal which exhibits birefringence and is a function of crystalline orientation. Used for Pockels effect.
UF *Pockels effect*
GS electromagnetic properties
. optical properties
. . **birefringence**
. . . Kerr electrooptical effect
refraction
. **birefringence**
. . Kerr electrooptical effect
RT anisotropic media
anisotropy
birefringent coatings
birefringent filters
calcite
electro-optics
Moire effects
nonlinear optics
photoelasticity
polarization (waves)
reflectance
refractivity
temperature inversions
Voigt effect

birefringent coatings
GS coatings
. **birefringent coatings**
RT anisotropic media
birefringence
birefringent filters
refractivity

birefringent filters
GS electromagnetic wave filters
. optical filters
. . **birefringent filters**
RT birefringence
birefringent coatings
∞ filters
optical properties
refractivity

Birkeland currents
(added May 1989)
GS electric current
. field aligned currents
. . **Birkeland currents**
. ionospheric currents
. . **Birkeland currents**
electricity
. atmospheric electricity
. . ionospheric currents
. . . **Birkeland currents**
RT auroral electrojets
auroral zones
electrojets
geomagnetism
ionospheric disturbances
magnetic disturbances
magnetic storms

birth
RT fertilization
fetuses
pregnancy
reproduction (biology)
reproductive systems

bismaleimide
GS nitrogen compounds
. amides
. . polyimides
. . . **bismaleimide**
. imides
. . **bismaleimide**
RT matrix materials
polyimide resins
polymer matrix composites
resin matrix composites
resins

bismuth
GS chemical elements
. **bismuth**
. . bismuth isotopes
metals
. **bismuth**
. . bismuth isotopes

bismuth 205
USE **bismuth isotopes**

bismuth alloys
GS alloys
. **bismuth alloys**
RT antimony alloys
eutectic alloys
magnesium alloys
tin alloys

bismuth compounds
GS **bismuth compounds**
. bismuth oxides
. bismuth sulfides
. bismuth tellurides
RT ∞ chemical compounds
Group 5A compounds
∞ metal compounds

bismuth isotopes
UF *bismuth 205*
GS chemical elements
. bismuth
. . **bismuth isotopes**
. nuclides
. . isotopes
. . . **bismuth isotopes**
metals
. bismuth
. . **bismuth isotopes**

bismuth oxides
GS bismuth compounds
. **bismuth oxides**
chalcogenides
. oxides
. . metal oxides
. . . **bismuth oxides**
RT BSCCO superconductors

bismuth sulfides
GS bismuth compounds
. **bismuth sulfides**
chalcogenides
. sulfides
. . inorganic sulfides
. . . **bismuth sulfides**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **bismuth sulfides**

bismuth tellurides
GS bismuth compounds
. **bismuth tellurides**
chalcogenides
. tellurides
. . **bismuth tellurides**
tellurium compounds
. tellurides
. . **bismuth tellurides**

bisphenols
GS hydroxyl compounds
. alcohols
. . phenols
. . . **bisphenols**

bistable amplifiers
USE **flip-flops**

bistable circuits
GS circuits
. **bistable circuits**
. . **flip-flops**
RT digital techniques
multivibrators
trigger circuits

bistatic radar
USE **multistatic radar**

bistatic reflectivity
DEF The characteristic of a reflector which reflects energy along a line, or lines, different from, or in addition to, that of the incident ray.
RT brightness
incident radiation
reflectance
scattering

bit error rate
DEF The number of erroneous bits or characters received from some fixed number of bits transmitted.
GS rates (per time)
. **bit error rate**
RT binary codes
binary data
binary digits
bit synchronization
bits
error analysis
error correcting codes
error detection codes
error signals
pulse communication
Reed-Solomon codes
signal to noise ratios
transmission efficiency
transmission rate (communications)

bit synchronization
GS synchronism
. **bit synchronization**
RT bit error rate
frequency synchronization

biternary code
RT∞ codes
differential pulse code modulation
digital systems
pulse code modulation

bits
RT binary digits
bit error rate
drill bits

bitumens
DEF Dark-colored (solid, semisolid, or viscous) cementitious substances, natural or manufactured, composed principally of high molecular weight hydrocarbons, of which asphalts, tars, pitches, and asphaltenes are typical.
RT carbon
coal
coke
∞ construction materials
lignite
∞ materials
solvent refined coal

bivariate analysis
GS statistical analysis
. variance (statistics)
. . multivariate statistical analysis
. . . **bivariate analysis**
RT correlation

BL Lacertae objects
DEF One of a class of astronomical objects exhibiting: (1) rapid variations in intensity at radio, infrared, and optical wavelengths; (2) energy distributions largely at infrared wavelengths; (3) absence of discrete features in low dispersion spectra; and (4) strong and rapidly varying polarization at visual and radio wavelengths.
GS celestial bodies
. blazars
. . **BL Lacertae objects**
RT extragalactic radio sources
galaxies
irregular galaxies
luminous intensity
polarization (waves)
radiant flux density
radio sources (astronomy)

black and white photography
GS imagery
. photography
. . **black and white photography**
RT all sky photography
astronomical photography
autoradiography
chronophotography
cinematography
cloud photography
color photography
electron photography
electro-optical photography
frame photography
infrared photography
lunar photography
photomicrography
photoreconnaissance
radar photography
rocket-borne photography
satellite-borne photography
Schlieren photography
shadowgraph photography
spaceborne photography
spectroheliographs
spectrophotography
stereophotography
ultraviolet photometry
urography

Black Arrow launch vehicle
USE **Black Knight rocket vehicle**

black body radiation
DEF The electromagnetic radiation emitted by an ideal black body; it is the theoretical maximum amount of radiant energy of all wavelengths which can be emitted by a body at a given temperature.
GS electromagnetic radiation
. thermal radiation
. . **black body radiation**
RT brightness distribution
brightness temperature
emissivity
heat radiators
hohlraums
infrared radiation
Kirchhoff law of radiation
light (visible radiation)
nongray atmospheres
nongray gas
Plancks constant
radiance
∞ radiation
sunlight
ultraviolet radiation

Black Brant 1 sounding rocket
GS rocket vehicles
. single stage rocket vehicles
. . Black Brant sounding rockets
. . . **Black Brant 1 sounding rocket**
. sounding rockets
. . Black Brant sounding rockets
. . . **Black Brant 1 sounding rocket**
RT solid propellant rocket engines

Black Brant 2 sounding rocket
GS rocket vehicles
. single stage rocket vehicles
. . Black Brant sounding rockets
. . . **Black Brant 2 sounding rocket**
. sounding rockets
. . Black Brant sounding rockets
. . . **Black Brant 2 sounding rocket**
RT solid propellant rocket engines

Black Brant 3 sounding rocket
GS rocket vehicles
. single stage rocket vehicles
. . Black Brant sounding rockets
. . . **Black Brant 3 sounding rocket**
. sounding rockets
. . Black Brant sounding rockets

. . . Black Brant 3 sounding rocket
RT solid propellant rocket engines

Black Brant 4 sounding rocket
GS rocket vehicles
. single stage rocket vehicles
. . Black Brant sounding rockets
. . . Black Brant 4 sounding rocket
. sounding rockets
. . Black Brant sounding rockets
. . . Black Brant 4 sounding rocket
RT solid propellant rocket engines

Black Brant 5 sounding rocket
GS rocket vehicles
. single stage rocket vehicles
. . Black Brant sounding rockets
. . . Black Brant 5 sounding rocket
. sounding rockets
. . Black Brant sounding rockets
. . . Black Brant 5 sounding rocket
RT solid propellant rocket engines

Black Brant sounding rockets
GS rocket vehicles
. single stage rocket vehicles
. . Black Brant sounding rockets
. . . Black Brant 1 sounding rocket
. . . Black Brant 2 sounding rocket
. . . Black Brant 3 sounding rocket
. . . Black Brant 4 sounding rocket
. . . Black Brant 5 sounding rocket
. sounding rockets
. . Black Brant sounding rockets
. . . Black Brant 1 sounding rocket
. . . Black Brant 2 sounding rocket
. . . Black Brant 3 sounding rocket
. . . Black Brant 4 sounding rocket
. . . Black Brant 5 sounding rocket
RT solid propellant rocket engines

Black Hawk assault helicopter
USE **H-60 Helicopter**

Black Hills (SD-WY)
GS landforms
. mountains
. . Black Hills (SD-WY)
RT South Dakota
Wyoming

black holes (astronomy)
GS celestial bodies
. stars
. . black holes (astronomy)
RT accretion disks
degenerate matter
event horizon
gravitational collapse
gravitational lenses
massive stars
naked singularities
Reissner-Nordstrom solution
supernova remnants
white holes (astronomy)
x ray binaries

Black Knight rocket vehicle
UF *Black Arrow launch vehicle*
GS rocket vehicles
. multistage rocket vehicles
. . Black Knight rocket vehicle
. single stage rocket vehicles
. . Black Knight rocket vehicle
RT liquid propellant rocket engines

Black Sea
GS seas
. Black Sea
RT Bulgaria
Romania
Turkey
U.S.S.R.

Blackbird aircraft
USE **SR-71 aircraft**

Blackburn B-103 aircraft
USE **Buccaneer aircraft**

∞ **blackout**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT blackout (physiology)
blackout (propagation)

blackout (physiology)
GS syncope
. blackout (physiology)
. . blackout prevention
unconsciousness
. blackout (physiology)
. . blackout prevention
RT acceleration tolerance
∞ blackout
∞ coma

blackout (propagation)
UF *ionospheric blackout*
GS electromagnetic interference
. radio frequency interference
. . blackout (propagation)
. . . polar radio blackout
RT atmospherics
∞ blackout
electromagnetic fields
electromagnetic noise
ionospheric disturbances
plasma sheaths
plasmas (physics)
radiation effects
radio communication
reentry communication
reentry effects
solar activity effects
x rays

blackout prevention
GS human performance
. astronaut performance
. . blackout prevention
. pilot performance
. . blackout prevention
syncope
. blackout (physiology)
. . blackout prevention
unconsciousness
. blackout (physiology)
. . blackout prevention
RT acceleration tolerance
∞ coma
weightlessness

bladder
GS anatomy
. genitourinary system
. . bladder
RT prostate gland
urology

bladders (mechanics)
USE **diaphragms (mechanics)**

blade slap
USE **blade-vortex interaction**

blade slap noise
DEF Impulsive noise (short high pressure sound waves) of rotating blades, primarily helicopter blades. Used for helicopter impulsive noise.
UF *helicopter impulsive noise*
GS elastic waves
. sound waves
. . noise (sound)
. . . aerodynamic noise
. . . . blade slap noise
. . aircraft noise
. . . . blade slap noise
RT blade tips
blade-vortex interaction
helicopters
propeller noise

blade tips
GS tips
. blade tips
RT airfoil profiles
blade slap noise
blade-vortex interaction
propeller blades
rotary wings
rotor blades (turbomachinery)
wing tips

blade-vortex interaction
UF *blade slap*
vortex-blade interaction
RT airfoils
blade slap noise
blade tips
helicopters
interactional aerodynamics
∞ interactions
rotary wings
vortices
wing tip vortices

∞ **blades**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Arms of propeller and rotating wings. Specifically, restrictive, those parts of propellers or of rotating wings from the shank outward, i.e., those parts having efficient airfoil shapes and that cleave the air. Vanes such as rotating vanes or stationary vanes in rotary air compressors, or vanes of turbine wheels.
RT airfoils
blades (cutters)
compressor blades
fins
hydrofoils
propeller blades
rims
rotary wings
rotor blades (turbomachinery)
stator blades
turbine blades
turbomachine blades
vanes

blades (cutters)
GS cutters
. blades (cutters)
. . razor blades
RT ∞ blades

∞ **blankets**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bedding equipment
blankets (fission reactors)

blankets (fusion reactors)
cloud cover
controlled atmospheres
solar blankets

blankets (fission reactors)
DEF Damper materials for fission reactors.
RT ∞ blankets
∞ dampers
fission
reactor design
reactor materials

blankets (fusion reactors)
DEF Damper materials for fusion reactors.
RT ∞ blankets
fusion reactors
limiters (fusion reactors)
moderators
reactor design
reactor materials

∞ **blanking**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT blanking (cutting)
forming techniques
stamping

blanking (cutting)
GS cutting
. **blanking (cutting)**
forming techniques
. pressing (forming)
. . **blanking (cutting)**
RT ∞ blanking
laser cutting
shearing
stamping

blanks
RT ammunition
briquets
forms (paper)
preforms

Blasius equation
GS analysis (mathematics)
. real variables
. . differential equations
. . . **Blasius equation**
flow equations
. boundary layer equations
. . **Blasius equation**
RT boundary layer flow
∞ equations
Falkner–Skan equation
flat plates
Prandtl–Meyer expansion

Blasius flow
GS fluid flow
. laminar flow
. . **Blasius flow**
. uniform flow
. . **Blasius flow**
RT flat plates
head flow
Tollmien–Schlichting waves
turbulent flow
two dimensional flow
wedge flow

blast deflectors
DEF Devices used to divert the exhaust of a rocket fired from a vertical position.
GS deflectors
. **blast deflectors**
RT baffles
diverters
flame deflectors
shielding

blast loads
GS aerodynamic forces
. aerodynamic loads
. . **blast loads**
loads (forces)
. dynamic loads
. . aerodynamic loads
. . . **blast loads**
. . transient loads
. . . shock loads
. . . . **blast loads**
RT aerial explosions
dynamic pressure
explosions
gust loads
impact loads
overpressure
pressure
pressure pulses
Riemann waves
shock waves
wave resistance

blastoff
USE **rocket launching**

∞ **blasts**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT exhaust gases
explosions
jet blast effects
shock waves
sound waves

Blattidae
USE **cockroaches**

blazars
(added December 1988)
DEF Strongly optical polarized active galactic nuclei objects exhibiting BL Lacertae–like and quasar–like characteristics.
GS celestial bodies
. **blazars**
. . BL Lacertae objects
RT accretion disks
active galactic nuclei
active galaxies
disk galaxies
extragalactic radio sources
infrared astronomy
quasars
radio galaxies
radio sources (astronomy)
Seyfert galaxies

bleaching
RT chlorination
cleaning
fading

bleed–off
USE **pressure reduction**

∞ **bleeding**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT boundary layer control
fluid mechanics
hemorrhages
pressure reduction

blends
USE **mixtures**

blight
GS plant diseases
. **blight**
RT alfalfa
bacteria
barley
botany
citrus trees
corn
crop growth
crop vigor
fungi
orchards
parasites
parasitic diseases
plants (botany)
rhizopus
rust fungi
vineyards

blind landing
GS landing
. **blind landing**
RT aircraft landing
approach indicators
automatic landing control
instrument approach
instrument flight rules
instrument landing systems
landing instruments
night flights (aircraft)

blindness
GS **blindness**
. flash blindness
RT braille
disabilities
eye diseases
optometry
vision

blinds
RT shielding
∞ shutters

blinking
RT astronomical photometry
display devices
eye movements
visual perception

∞ **blisters**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT infectious diseases
injuries
mucoceles
protuberances
rupturing
skin (anatomy)
viruses

Bloch band
GS energy bands
. **Bloch band**
RT ∞ bands
superconductivity

block copolymers
(added January 1990)
GS copolymers
. **block copolymers**
RT copolymerization
polybutadiene
∞ polymers

polystyrene

block diagrams
GS diagrams
. **block diagrams**
RT charts
computer programming
computer programs
flow charts
research management
systems analysis

Block Island Sound (RI)
GS sounds (topographic features)
. **Block Island Sound (RI)**
RT Atlantic Ocean
Rhode Island

blocking
UF *obstructing*
RT ∞ arresters
closing
closures
constraints
constrictions
containment
plugging
plugs
prevention
retarders (devices)
retarding
sealing
seals (stoppers)
stopping

blocks
RT cubes (mathematics)
pulleys
slabs

bloedite
DEF A mineral consisting of hydrous sodium mangnesium sulfate that is colorless. Also known as astrakanite or astrochanite.
GS minerals
. **bloedite**
RT magnesium sulfates
sodium compounds
sulfur compounds

blood
GS body fluids
. **blood**
. . fibrin
. . fibrinogen
. . thrombin
. . thromboplastin
RT anemias
biocompatibility
blood cells
blood circulation
blood coagulation
blood flow
blood groups
blood plasma
blood pressure
blood pumps
blood vessels
blood volume
blood–brain barrier
capillaries (anatomy)
carboxyhemoglobin test
cardiovascular system
coagulation
heart
hematocrit
hematopoiesis
hemoglobin
hemorrhages
hypercapnia
hypocapnia
oximetry
Rhesus factor
transfusion

blood cells
UF *corpuscles (blood)*
GS cells (biology)
. **blood cells**
. . erythrocytes
. . . reticulocytes
. . hemocytes
. . leukocytes
. . . eosinophils
. . . lymphocytes
RT anemias
blood
blood plasma
hematopoiesis
hematopoietic system
hemoglobin

blood circulation
GS circulation
. **blood circulation**
. . brain circulation
. . coronary circulation
. . intercranial circulation
. . ocular circulation
. . peripheral circulation
. . pulmonary circulation
RT artificial cardiac pacemaker
artificial heart valves
blood
blood–brain barrier
carboxyhemoglobin
circulatory system
cyanosis
diastole
electroplethysmography
heart function
heart implantation
hematocrit
hemodynamic responses
hemodynamics
hypervolemia
hypovolemia
intravascular system
ischemia
phonoarteriography
physiology
rheoencephalography
rheometers
tourniquets

blood coagulation
GS coagulation
. **blood coagulation**
RT blood
clotting
fibrin
hemostatics
myocardial infarction
platelets
thrombin
thrombocytes
thromboplastin
thrombosis

blood flow
GS fluid flow
. **blood flow**
RT blood
capillary flow
diastole
hematocrit
hemoperfusion
systole
tourniquets

blood groups
RT blood
platelets

blood plasma
RT blood
blood cells
body fluids
electrolyte metabolism
hematocrit

blood pressure
GS pressure
. **blood pressure**
. . diastolic pressure
. . hypertension
. . hypotension
. . lower body negative pressure
. . systolic pressure
RT biofeedback
blood
diastole
heart function
hemodynamic responses
hemoperfusion
manometers
ophthalmodynamometry
orthostatic tolerance
sphygmography
systole
∞ tension

blood pumps
GS medical equipment
. **blood pumps**
pumps
. **blood pumps**
RT artificial heart valves
biotechnology
blood
circulatory system
heart
pulmonary circulation

blood vessels
GS anatomy
. circulatory system
. . cardiovascular system
. . . **blood vessels**
. . . . arteries
. . . . . aorta
. . . . capillaries (anatomy)
. . . . . glomerulus
. . . . veins
RT bifurcation (biology)
blood
carotid sinus body
carotid sinus reflex
catheterization
embolisms
endothelium
fat embolisms
vasoconstriction
vasodilation
∞ vessels

blood volume
RT blood
cardiac output
cardiovascular system
chronic conditions
clinical medicine
hematocrit

hematopoietic system
hemodynamics
hypervolemia
hypovolemia
stroke volume

blood–brain barrier
DEF A mechanism which maintains the constancy of the neurons in the central nervous system by preventing certain substances from leaving the bloodstream and entering the neural tissue.
RT ∞ barriers
blood
blood circulation
central nervous system
neurons

blowdown wind tunnels
GS test facilities
. wind tunnels
. . **blowdown wind tunnels**
RT hotshot wind tunnels
hypersonic wind tunnels
hypervelocity wind tunnels
low density research
low speed wind tunnels
subsonic wind tunnels
supersonic wind tunnels
transonic wind tunnels

blowers
RT air conditioning
air conditioning equipment
air ducts
blowing
centrifugal compressors
compressors
cooling systems
ducted fans
exhaust systems
∞ fans
impellers
injectors
materials handling
mixers
∞ nozzles
refrigerating machinery
sealing
sprayers
superchargers
turbomachinery
ventilation
ventilation fans
ventilators

blowing
GS **blowing**
. spanwise blowing
. tangential blowing
. under surface blowing
. upper surface blowing
RT aeration
agitation
blowers
boundary layer control
circulation
circulation control airfoils
compressing
entrainment
exhausting
externally blown flaps
forced convection
injection
mixing
∞ pumping
spraying
upper surface blown flaps
wind (meteorology)

blown flaps
USE **externally blown flaps**

blowoff (combustion)
USE **flameout**

blowouts
RT fatigue life
tires

Blue Goose missile
GS decoys
. **Blue Goose missile**
missiles
. surface to air missiles
. . **Blue Goose missile**
RT booster rocket engines
countermeasures
J–85 engine
solid propellant rocket engines

blue green algae
UF *Cyanophyta*
GS plants (botany)
. algae
. . **blue green algae**
. . . anabaena
. . . Microcystis
. . . Nostoc
. thermophilic plants
. . **blue green algae**
. . . anabaena
. . . Microcystis
. . . Nostoc

Blue Scout rocket vehicle
GS launch vehicles
. **Blue Scout rocket vehicle**
rocket vehicles
. multistage rocket vehicles
. . **Blue Scout rocket vehicle**
RT Algol engine
solid propellant rocket engines
X–248 engine
X–254 engine
XM–33 engine

blue stars
DEF Stars of spectral type O, B, A, or F according to the Draper catalog.
GS celestial bodies
. stars
. . early stars
. . . hot stars
. . . . **blue stars**
RT A stars
B stars
F stars
O stars

Blue Steel missile
GS missiles
. **Blue Steel missile**
RT liquid propellant rocket engines

Blue Streak launch vehicle
GS launch vehicles
. **Blue Streak launch vehicle**
rocket vehicles
. **Blue Streak launch vehicle**
RT Eldo launch vehicle
liquid propellant rocket engines

Blue Streak missile
GS missiles
. ballistic missiles
. . intermediate range ballistic missiles
. . . **Blue Streak missile**
. surface to surface missiles
. . intermediate range ballistic missiles
. . . **Blue Streak missile**
rocket vehicles
. **Blue Streak missile**
RT liquid propellant rocket engines

blueprints
GS documents
. drawings
. . engineering drawings
. . . **blueprints**
RT layouts
reproduction (copying)

bluff bodies
DEF Bodies having a broad, flattened front, as in some reentry vehicles.
RT blunt bodies
∞ bodies
ducted bodies
forebodies
lifting bodies
reentry vehicles
Roshko prediction

bluffs (landforms)
USE **cliffs**

blunt bodies
RT aerodynamic configurations
aerodynamics
axisymmetric bodies
bluff bodies
∞ bodies
ducted bodies
forebodies
missile bodies
nose cones
power law bodies
stagnation point
symmetrical bodies

blunt leading edges
DEF The obtuse cross sections of certain front edges of airfoils or wings.
GS edges
. leading edges
. . **blunt leading edges**
RT airfoils
forebodies
trailing edges

blunt trailing edges
DEF The rounded or obtuse angled trailing edges of wings and/or control surfaces designed to enhance aerodynamic characteristics.
GS edges
. trailing edges
. . **blunt trailing edges**
RT airfoils
control surfaces
wings

blurring
RT aberration
resolution
spatial filtering

BMC
USE **bone mineral content**

BMEWS
USE **Ballistic Missile Early Warning System**

BO–105 helicopter
GS Bolkow aircraft
. **BO–105 helicopter**
passenger aircraft
. **BO–105 helicopter**
utility aircraft
. **BO–105 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **BO–105 helicopter**

boards (paper)
UF *fiberboard*
RT ∞ construction materials
paper (material)
papers

boats
GS surface vehicles
. **boats**
. . **lifeboats**
water vehicles
. **boats**
. . **lifeboats**
RT amphibious vehicles
harbors
inflatable structures
keels
∞ military vehicles
research vehicles
ships
underwater vehicles

boattails
DEF The rear portions of elongated bodies, as in rockets, having decreasing cross–sectional area toward the rear.
RT afterbodies
skirts
tail assemblies

BOD
USE **biochemical oxygen demand**

∞ **bodies**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT afterbodies
axisymmetric bodies
bluff bodies
blunt bodies
bodies of revolution
celestial bodies
centerbodies
ducted bodies
elastic bodies
finned bodies
flexible bodies
foreign bodies
Herbig–Haro objects
human body
lenticular bodies
lifting bodies
maneuverable reentry bodies
missile bodies
planforms
plastic bodies
pyramidal bodies
reentry vehicles
rotating bodies
slender bodies
solids
streamlined bodies
symmetrical bodies
three dimensional bodies
towed bodies
two dimensional bodies

bodies of revolution
DEF Symmetrical bodies having the form described by rotating a plane curve about an axis in its plane.
GS symmetrical bodies
. **bodies of revolution**
. . conical bodies
. . . slender cones
. . cylindrical bodies
. . . rotating cylinders
. . parabolic bodies
. . power law bodies
. . spheres
. . . celestial sphere
. . . concentric spheres
. . . falling spheres
. . . Poincare spheres
. . . rotating spheres
. . toruses
RT aerodynamic configurations
aerodynamics
axes of rotation
axisymmetric bodies
∞ bodies
cones
disks (shapes)
ellipsoids
finned bodies
geometry
∞ hemispheres
hemispherical shells
ogives
∞ rings
spherical shells
streamlined bodies

body centered cubic lattices
UF *BCC lattices*
GS crystal lattices
. cubic lattices
. . **body centered cubic lattices**
RT close packed lattices
cluster variation method
crystals
face centered cubic lattices

body composition (biology)
GS composition (property)
. **body composition (biology)**
RT ∞ biology
chemical composition
exoskeletons

body fluids
GS **body fluids**
. blood
. . fibrin
. . fibrinogen
. . thrombin
. . thromboplastin
. cerebrospinal fluid
. endolymph
. lymph
. mucus
. saliva
. sweat
. urine
RT blood plasma
diuresis
edema
electrolyte metabolism
∞ fluids
isotonicity
lysozyme
mineral metabolism
obesity
perspiration
secretions
water
water balance

body kinematics
GS kinematics
. **body kinematics**
RT acceleration (physics)
acceleration stresses (physiology)
kinetics
particle theory
velocity

body measurement (biology)
SN (LIMITED TO BIOLOGICAL APPLICATIONS—FOR MEASUREMENT OF NON–BIOLOGICAL BODIES USE SIZE DETERMINATION)
GS bioengineering
. biometrics
. . **body measurement (biology)**
. . . anthropometry
. . . electroplethysmography
RT ∞ biology
biomedical data
electrocardiography
electroencephalography
electrophysiology
∞ engineering
human body
human factors engineering
obesity
size determination
∞ sizing

body size (biology)
RT anthropometry
∞ biology
obesity

body sway test
GS physiological tests
. **body sway test**
RT ∞ equilibrium
head down tilt
vertical perception
vestibular tests

body temperature
SN (LIMITED TO TEMPERATURE OF BIOLOGICAL BODIES)
GS temperature
. **body temperature**
RT cold tolerance
fever
heat acclimatization
heat stroke
heat tolerance
homeostasis
homeotherms
humidity
hyperthermia
hypothermia
perspiration
poikilothermia
shivering
thermoreceptors
thermoregulation
vasoconstriction
vasodilation

body temperature (non–biological)
USE **temperature**

body temperature regulation
USE **thermoregulation**

body volume (biology)
GS volume
. **body volume (biology)**
RT∞ biology
obesity

body weight
GS weight (mass)
. **body weight**
RT obesity
weightlessness

body–wing and tail configurations
GS aerodynamic configurations
. **body–wing and tail configurations**
RT∞ configurations
fuselages
tail assemblies
wings

body–wing configurations
GS aerodynamic configurations
. **body–wing configurations**
RT airfoils
drooped airfoils
GAW–2 airfoil
wings

Boeing 2707 aircraft
GS Boeing aircraft
. **Boeing 2707 aircraft**
commercial aircraft
. supersonic commercial air transport
. . **Boeing 2707 aircraft**
jet aircraft
. **Boeing 2707 aircraft**
passenger aircraft
. **Boeing 2707 aircraft**
supersonic aircraft
. supersonic transports
. . supersonic commercial air transport
. . . **Boeing 2707 aircraft**
transport aircraft
. **Boeing 2707 aircraft**
RT∞ aircraft

Boeing 707 aircraft
GS Boeing aircraft
. **Boeing 707 aircraft**
commercial aircraft
. **Boeing 707 aircraft**
jet aircraft
. turbofan aircraft
. . **Boeing 707 aircraft**
monoplanes
. **Boeing 707 aircraft**
passenger aircraft
. **Boeing 707 aircraft**
transport aircraft
. **Boeing 707 aircraft**
RT∞ aircraft

Boeing 720 aircraft
GS Boeing aircraft
. **Boeing 720 aircraft**
commercial aircraft
. **Boeing 720 aircraft**
jet aircraft
. turbofan aircraft
. . **Boeing 720 aircraft**
monoplanes
. **Boeing 720 aircraft**
passenger aircraft
. **Boeing 720 aircraft**
transport aircraft
. **Boeing 720 aircraft**
RT∞ aircraft

Boeing 727 aircraft
GS Boeing aircraft
. **Boeing 727 aircraft**
commercial aircraft
. **Boeing 727 aircraft**
jet aircraft
. turbofan aircraft
. . **Boeing 727 aircraft**
passenger aircraft
. **Boeing 727 aircraft**
transport aircraft
. **Boeing 727 aircraft**
RT∞ aircraft
cargo aircraft

Boeing 733 aircraft
GS Boeing aircraft
. **Boeing 733 aircraft**
commercial aircraft
. **Boeing 733 aircraft**
jet aircraft
. turbofan aircraft
. . **Boeing 733 aircraft**
monoplanes
. **Boeing 733 aircraft**
supersonic aircraft
. **Boeing 733 aircraft**
transport aircraft
. **Boeing 733 aircraft**
RT∞ aircraft
variable sweep wings

Boeing 737 aircraft
GS Boeing aircraft
. **Boeing 737 aircraft**
commercial aircraft
. **Boeing 737 aircraft**
jet aircraft
. turbofan aircraft
. . **Boeing 737 aircraft**
monoplanes
. **Boeing 737 aircraft**
passenger aircraft
. **Boeing 737 aircraft**
transport aircraft
. **Boeing 737 aircraft**
RT∞ aircraft
cargo aircraft

Boeing 747 aircraft
GS Boeing aircraft
. **Boeing 747 aircraft**
commercial aircraft
. **Boeing 747 aircraft**
jet aircraft
. **Boeing 747 aircraft**
passenger aircraft
. **Boeing 747 aircraft**
transport aircraft
. **Boeing 747 aircraft**
RT∞ aircraft
SOFIA (airborne observatory)
turbofan engines
X–34 reusable launch vehicle

Boeing 747B aircraft
USE **E–4A aircraft**

Boeing 757 aircraft
DEF Boeing's twin turbofan short/medium range transport aircraft that made its first flight on February 19, 1982.
GS Boeing aircraft
. **Boeing 757 aircraft**
commercial aircraft
. **Boeing 757 aircraft**
jet aircraft
. turbofan aircraft
. . **Boeing 757 aircraft**
monoplanes
. **Boeing 757 aircraft**
passenger aircraft
. **Boeing 757 aircraft**
transport aircraft
. **Boeing 757 aircraft**
RT∞ aircraft

Boeing 767 aircraft
DEF Boeing's widebodied medium range commercial transport aircraft that made its first flight on September 26, 1981.
GS Boeing aircraft
. **Boeing 767 aircraft**
commercial aircraft
. **Boeing 767 aircraft**
jet aircraft
. turbofan aircraft
. . **Boeing 767 aircraft**
monoplanes
. **Boeing 767 aircraft**
passenger aircraft
. **Boeing 767 aircraft**
transport aircraft
. **Boeing 767 aircraft**
RT∞ aircraft
cargo aircraft
turbofan engines

Boeing 777 aircraft
(added September 1994)
GS Boeing aircraft
. **Boeing 777 aircraft**
commercial aircraft
. **Boeing 777 aircraft**
jet aircraft
. **Boeing 777 aircraft**
passenger aircraft
. **Boeing 777 aircraft**
transport aircraft
. **Boeing 777 aircraft**
RT∞ aircraft

Boeing aircraft
UF *Vertol military helicopters*
GS **Boeing aircraft**
. B–47 aircraft
. B–50 aircraft
. B–52 aircraft
. Boeing 707 aircraft
. Boeing 720 aircraft
. Boeing 727 aircraft
. Boeing 733 aircraft
. Boeing 737 aircraft
. Boeing 747 aircraft
. Boeing 757 aircraft
. Boeing 767 aircraft
. Boeing 777 aircraft
. Boeing 2707 aircraft
. C–135 aircraft
. CH–21 helicopter
. CH–46 helicopter
. CH–47 helicopter
. CH–62 helicopter
. E–3A aircraft
. E–4A aircraft
. H–25 helicopter
. V–22 aircraft
. VZ–2 aircraft
. X–20 aircraft
RT∞ aircraft
AWACS aircraft
YC–14 aircraft

Bogoliubov theory
RT BBGKY hierarchy
∞ theories

bogs
USE **marshlands**

Bohr magneton
DEF A constant equivalent to the magnetic moment of an electron.
GS constants
. **Bohr magneton**
RT electrons
magnetic moments

Bohr theory
GS theoretical physics
. quantum theory
. . **Bohr theory**
RT electron transitions
line spectra
∞ theories

boiler plate
GS structural members
. plates (structural members)
. . metal plates
. . . **boiler plate**
RT thick walls

boilers
UF *steam generators*
GS heating equipment
. **boilers**
RT external combustion engines
furnaces
∞ generators
heat balance
pressure vessels
steam
vaporizers
waste energy utilization

boiling
UF *ebullition*
GS phase transformations
. vaporizing
. . **boiling**
. . . film boiling
. . . nucleate boiling
. . . . Leidenfrost phenomenon
RT effervescence
evaporation
evolution (liberation)
heat transfer
heating

boiling water reactors
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . **boiling water reactors**
. . . . experimental boiling water reactors
. . . . Halden Boiling Water Reactor
. . . . Los Alamos Water Boiler Reactor
. . . . Pathfinder nuclear reactor
. . . . Sperl reactors
RT nuclear power reactors
nuclear research and test reactors

bolides
DEF Brilliant meteors, especially ones which explode; detonating fireballs.
GS celestial bodies
. meteoroids
. . **bolides**
. . . Cyrillid meteoroids
RT atmospheric entry
atmospheric heating
∞ fireballs
meteor trails
meteorites
meteoroid showers
Pribram meteorite

Bolivia
GS nations
. **Bolivia**
RT South America

Bolkow aircraft
GS **Bolkow aircraft**
. BO–105 helicopter
RT ∞ aircraft

boll weevils
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . Coleoptera
. . . . . **boll weevils**
RT bollworms
cotton
infestation

bollworms
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **bollworms**
larvae
. **bollworms**
RT boll weevils
corn
cotton
fruits
infestation
moths

bolograms
USE **bolometers**

bolometers
DEF Instruments which measure the intensity of radiant energy by employing thermally sensitive electrical resistors; a type of actinometer. Used for bolograms.
UF *bolograms*
GS measuring instruments
. radiation measuring instruments
. . **bolometers**
RT Dicke radiometers
electrical measurement
heat measurement
infrared detectors
photometers
potentiometers (instruments)
radiation pyrometers
radiometers
resistance thermometers
temperature measurement
temperature measuring instruments
x ray detectors

bolted joints
DEF Joints fastened with bolts. They are usually designed for heavy loads.
GS joints (junctions)
. **bolted joints**
RT bolts
lap joints
riveted joints

bolts
GS fasteners
. **bolts**
. . rock bolts
. . tiebolts
RT anchors (fasteners)
bolted joints
couplings
holders
nuts (fasteners)
screws
studs (structural members)
threads

Boltzmann distribution
GS distribution (property)
. **Boltzmann distribution**
RT atmospheric density
atmospheric diffusion
kinetic theory
statistical mechanics
two fluid models

Boltzmann transport equation
RT BBGKY hierarchy
BGK model
Burnett equations
Chapman–Enskog theory
∞ equations
Fokker–Planck equation
hydrodynamic equations
kinetic theory
particle diffusion
statistical mechanics
transport properties
transport theory

Boltzmann–Vlasov equation
RT ∞ equations
high temperature plasmas
Maxwell equation
partial differential equations
wave equations

Bolza problems
RT optimization
∞ problems

BOMARC A missile
GS missiles
. antiaircraft missiles
. . BOMARC missiles
. . . **BOMARC A missile**
. surface to air missiles
. . BOMARC missiles
. . . **BOMARC A missile**
RT liquid propellant rocket engines
solid propellant rocket engines

BOMARC B missile
GS missiles
. antiaircraft missiles
. . BOMARC missiles
. . . **BOMARC B missile**
. surface to air missiles
. . BOMARC missiles
. . . **BOMARC B missile**
RT liquid propellant rocket engines
solid propellant rocket engines

BOMARC missiles
GS missiles
. antiaircraft missiles
. . **BOMARC missiles**
. . . BOMARC A missile
. . . BOMARC B missile
. surface to air missiles
. . **BOMARC missiles**

. . . BOMARC A missile
. . . BOMARC B missile

bomb calorimeters
GS measuring instruments
. calorimeters
. . **bomb calorimeters**
RT drop calorimeters
flame calorimeters
heat measurement
high temperature tests
temperature measuring instruments

∞ **bombardment**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT electron bombardment
hypervelocity projectiles
irradiation
meteoritic damage
sputtering

bomber aircraft
GS attack aircraft
. **bomber aircraft**
. . A-2 aircraft
. . A-3 aircraft
. . A-4 aircraft
. . A-5 aircraft
. . A-6 aircraft
. . B-1 aircraft
. . B-2 aircraft
. . B-26 aircraft
. . B-47 aircraft
. . B-50 aircraft
. . B-52 aircraft
. . B-57 aircraft
. . B-58 aircraft
. . B-66 aircraft
. . B-70 aircraft
. . F-111 aircraft
. . Shackleton bomber
. . Valiant aircraft
. . Victor MK-1 aircraft
. . Vulcan aircraft
RT ∞ aircraft
antisubmarine warfare aircraft
bombing equipment
F-117A aircraft
jet aircraft
∞ military aircraft
∞ military aviation
tanker aircraft
training aircraft
Vampire MK 35 aircraft

bombing equipment
GS onboard equipment
. aircraft equipment
. . **bombing equipment**
RT B-1 aircraft
bomber aircraft
bombs (ordnance)
∞ equipment
fire control

∞ **bombs**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bombs (ordnance)
precision guided projectiles
pressure gages
samplers

bombs (ordnance)
DEF Explosive devices designed to be detonated under specified conditions.
GS explosive devices
. **bombs (ordnance)**
RT ammunition
B-1 aircraft
bombing equipment
∞ bombs
explosives
incendiary ammunition
missiles
nuclear weapons
projectiles
pyrotechnics
shaped charges
torpedoes
warheads

bombs (pressure gages)
USE **pressure gages**

bombs (samplers)
USE **samplers**

Bonanza aircraft
USE **C-35 aircraft**

bond graphs
GS charts
. graphs (charts)
. . **bond graphs**
RT control systems design
differential equations
dynamic models
mathematical models
∞ mathematics
simulation
systems analysis
systems engineering

bonded joints
(added March 1993)
UF *bondlines*
GS joints (junctions)
. **bonded joints**
RT adhesive bonding
bonding
rocket engine cases
rocket linings
soldered joints
solid propellant rocket engines
welded joints

bonding
DEF Specifically, a system of connections between all metal parts of an aircraft or other structure forming a continuous electrical unit and preventing jumping or arching of static electricity. Glueing or cementing together for structural strength.
GS **bonding**
. adhesive bonding
. agglutination
. ceramic bonding
. explosive welding
. inertia bonding
. metal bonding
. . metal-metal bonding
. reaction bonding
. resin bonding
RT adhesion
adhesion tests
beam leads
binding
bonded joints
cementation
chemical bonds
cohesion
cold welding
debonding (materials)
diffusion welding
∞ joining
joints (junctions)
laminates
laser welding
sealing
soldering
superplastic forming
welding

bondlines
USE **bonded joints**

Bondoc meteorite
GS celestial bodies
. meteorites
. . stony meteorites
. . . achondrites
. . . . **Bondoc meteorite**

bone demineralization
GS demineralizing
. **bone demineralization**
diseases
. **bone demineralization**
RT biological effects
∞ biology
bones
osteoporosis
physiological effects
physiology
weightlessness

bone marrow
GS anatomy
. musculoskeletal system
. . connective tissue
. . . **bone marrow**
RT bones
cancer
erythrocytes
hematopoiesis
hematopoietic system
leukemias
leukocytes

bone mineral content
UF *BMC*
GS content
. **bone mineral content**
RT bioengineering
∞ biology
biometrics
bones
calcium carbonates
calcium phosphates
collagens
minerals
osteoporosis

bones
GS anatomy
. musculoskeletal system
. . **bones**
. . . femur
. . . pelvis
. . . scapula
. . . skull
. . . . cranium
. . . . . intracranial cavity
. . . . mastoids
. . . spine
. . . . vertebrae
. . . sternum
. . . tibia

. . . ulna
RT arthritis
bone demineralization
bone marrow
bone mineral content
calcification
cartilage
chin
connective tissue
exoskeletons
joints (anatomy)
lamella
osteoporosis
spinal cord
splints

Bonne projection
DEF A type of conical map projection in which meridians are plotted as curves and the parallels are spaced along them at true distances.
RT mapping
maps
∞ projection

Boolean algebra
DEF The study of the manipulation of symbols representing operations according to the rules of logic. Boolean algebra corresponds to an algebra using only the numbers 0 and 1, therefore can be used in programming digital computers which operate on the binary principle.
GS mathematical logic
. lattices (mathematics)
. . **Boolean algebra**
. . . Boolean functions
RT algebra
∞ conjunction
instruction sets (computers)
∞ logic
set theory
switching theory
transistor logic
∞ unions

Boolean functions
GS functions (mathematics)
. **Boolean functions**
mathematical logic
. lattices (mathematics)
. . Boolean algebra
. . . **Boolean functions**

∞ **boom**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT booms (equipment)
sonic booms
tail assemblies

booms (equipment)
GS positioning devices (machinery)
. **booms (equipment)**
RT∞ boom
cranes

boost
USE **acceleration (physics)**

booster recovery
RT expendable stages (spacecraft)
recoverable launch vehicles
∞ recovery
recovery parachutes
spacecraft recovery

booster rocket engines
UF *rocket boosters*
GS engines
. rocket engines
. . **booster rocket engines**
. . . AJ-10 engine
. . . Algol engine
. . . apogee boost motors
. . . H-1 engine
. . . LR-87-AJ-5 engine
. . . M-1 engine
. . . M-55 engine
. . . MA-2 engine
. . . MA-3 engine
. . . MA-5 engine
. . . Nike booster rocket engines
. . . P-1 engine
. . . rocket engine 9KS-11000
. . . Space Shuttle Boosters
. . . . Advanced Solid Rocket Motor (STS)
. . . X-405 engine
RT air breathing boosters
Blue Goose missile
∞ boosters
burnout
ducted rocket engines
expendable stages (spacecraft)
F-1 rocket engine
hybrid propellant rocket engines
internal combustion engines
launch vehicles
liftoff (launching)
liquid propellant rocket engines
Mace missiles
nuclear engine for rocket vehicles
nuclear rocket engines
oxygen–hydrocarbon rocket engines
recoverable spacecraft
solid propellant rocket engines
spinning solid upper stage
stage separation
sustainer rocket engines
turborocket engines
TX-354 engine

∞ **booster rockets**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT launch vehicles

∞ **boosters**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT air breathing boosters
amplifiers
apogee boost motors
booster rocket engines
boosters (explosives)
launch vehicles
Scout project
Space Shuttle Boosters
Titan project

boosters (explosives)
GS explosive devices
. initiators (explosives)
. . **boosters (explosives)**
igniters
. initiators (explosives)
. . **boosters (explosives)**
RT∞ boosters
exploding wires

boostglide vehicles
DEF Vehicles designed to glide in the atmosphere following a rocket-powered phase. Portions of the flights may be ballistic, out of the atmosphere.
GS gliders
. **boostglide vehicles**
. . X-20 aircraft
reentry vehicles
. **boostglide vehicles**
. . X-20 aircraft
RT aerospace planes
∞ aircraft
Astro vehicle
gliding
hypersonic aircraft
hypersonic gliders
lifting reentry vehicles
manned spacecraft
recoverable spacecraft
rocket planes
∞ vehicles

boots (footwear)
GS clothing
. **boots (footwear)**
RT shoes

Borsil
GS composite materials
. **Borsil**
composite structures
. laminates
. . **Borsil**
RT aluminum
boron carbides
radiation shielding

boranes
GS boron compounds
. boron hydrides
. . **boranes**
. . . carborane
. . . hydrazine borane
. . . pentaboranes
hydrogen compounds
. hydrides
. . boron hydrides
. . . **boranes**
. . . . carborane
. . . . hydrazine borane
. . . . pentaboranes
RT borohydrides

borates
GS boron compounds
. **borates**
. . lithium borates
RT boric acids
∞ oxygen compounds

Borazon (trademark)
USE **boron nitrides**

borders
RT boundaries
margins
rims

Bordoni peaks
RT elastic deformation
plastic deformation
resonant frequencies
stress relaxation

boredom
RT detachment
human behavior
human reactions
lethargy
monotony
psychological effects

psychology
space flight stress

boreholes
DEF Holes made by drilling into the ground to study stratification, to search for or to obtain natural resources, or to release underground pressures.
RT cavities
clays
drilling
excavation
exploration
geology
gravels
∞ holes
minerals
pits (excavations)
rocks
shales
soils

Borel sets
GS analysis (mathematics)
. real variables
. . measure and integration
. . . **Borel sets**
mathematical logic
. set theory
. . **Borel sets**
RT probability theory

bores
USE **cavities**

borescopes
USE **endoscopes**

boresight error
DEF Linear displacement between two parallel lines of sight.
GS errors
. position errors
. . **boresight error**
RT air navigation
boresights
directional antennas
displacement
displacement measurement
error analysis
instrument errors
line of sight communication
navigation instruments
optical tracking
range errors

boresights
RT boresight error
directional antennas
optical tracking

boric acids
GS acids
. **boric acids**
boron compounds
. **boric acids**
RT borates

borides
GS boron compounds
. **borides**
. . chromium borides
. . titanium borides
RT intermetallics

boring machines
GS tools
. machine tools
. . **boring machines**
RT drills
∞ machinery

Born approximation
UF *Born–Mayer equation*
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Born approximation**
RT ∞ equations
quantum mechanics
scattering cross sections

Born–Infeld theory
RT electrodynamics
electrostatics
Maxwell equation
nonlinear equations
∞ theories

Born–Mayer equation
USE **Born approximation**

Born–Oppenheimer approximation
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Born–Oppenheimer approximation**
RT Franck–Condon principle

borohydrides
GS boron compounds
. **borohydrides**
. . aluminum borohydrides
. . beryllium borohydrides
hydrogen compounds
. hydrides
. . **borohydrides**
. . . aluminum borohydrides
. . . beryllium borohydrides
RT boranes
boron hydrides

boron
GS chemical elements
. metalloids
. . **boron**
. . . boron isotopes
. . . . boron 10
RT boron reinforced materials
Borsic (tradename)

boron 10
GS chemical elements
. metalloids
. . boron
. . . boron isotopes
. . . . **boron 10**
. nuclides
. . isotopes
. . . boron isotopes
. . . . **boron 10**

boron alloys
GS alloys
. **boron alloys**
RT metalloids

boron carbides
GS boron compounds
. **boron carbides**
carbon compounds
. carbides
. . **boron carbides**
RT Boral
ceramic fibers

boron chlorides
GS boron compounds
. **boron chlorides**
halogen compounds
. chlorine compounds
. . chlorides
. . . **boron chlorides**
. halides
. . chlorides
. . . **boron chlorides**

boron compounds
GS **boron compounds**
. borates
. . lithium borates
. boric acids
. borides
. . chromium borides
. . titanium borides
. borohydrides
. . aluminum borohydrides
. . beryllium borohydrides
. boron carbides
. boron chlorides
. boron fluorides
. boron hydrides
. . aluminum borohydrides
. . beryllium borohydrides
. . boranes
. . . carborane
. . . hydrazine borane
. . . pentaboranes
. boron nitrides
. boron oxides
. boron phosphides
. diborane
. organic boron compounds
. tourmaline
RT ∞ chemical compounds
Group 3A compounds
high energy fuels
metal fuels
metal propellants

boron fibers
DEF Fibers produced by vapor deposition methods; used in various composite materials to impart a balance of strength and stiffness.
GS fibers
. reinforcing fibers
. . **boron fibers**
RT aluminum boron composites
Borsic (tradename)
carbon fibers
composite materials
fiber composites
fiber orientation
fiber strength
∞ filaments
glass fibers
metal matrix composites
polymer matrix composites
reinforced plastics

boron fluorides
UF *boron trifluoride*
GS boron compounds
. **boron fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . **boron fluorides**
. halides
. . fluorides
. . . **boron fluorides**

boron hydrides
GS boron compounds
. **boron hydrides**
. . aluminum borohydrides
. . beryllium borohydrides
. . boranes
. . . carborane
. . . hydrazine borane
. . . pentaboranes
hydrogen compounds
. hydrides
. . **boron hydrides**
. . . aluminum borohydrides
. . . beryllium borohydrides
. . . boranes
. . . . carborane
. . . . hydrazine borane
. . . . pentaboranes
RT borohydrides

boron isotopes
GS chemical elements
. **metalloids**
. . boron
. . . **boron isotopes**
. . . . boron 10
. **nuclides**
. . isotopes
. . . **boron isotopes**
. . . . boron 10

boron nitrides
UF *Borazon (trademark)*
GS boron compounds
. **boron nitrides**
nitrogen compounds
. nitrides
. . **boron nitrides**

boron oxides
GS boron compounds
. **boron oxides**
chalcogenides
. oxides
. . **boron oxides**

boron phosphides
GS boron compounds
. **boron phosphides**
phosphorus compounds
. phosphides
. . **boron phosphides**

boron reinforced materials
GS composite materials
. **boron reinforced materials**
. . aluminum boron composites
. . boron-epoxy composites
RT boron
ceramic matrix composites
epoxy resins
fiber composites
fibers
∞ materials
plastics
reinforced plastics
reinforcing fibers

boron trifluoride
USE **boron fluorides**

boron-epoxy composites
GS composite materials
. boron reinforced materials
. . **boron-epoxy composites**
. polymer matrix composites
. . epoxy matrix composites
. . . **boron-epoxy composites**
. resin matrix composites
. . **boron-epoxy composites**
RT aircraft structures
∞ chemical compounds
composite structures
epoxy resins
fiber composites
laminates
plastic aircraft structures
spacecraft components
superhybrid materials

borosilicate glass
DEF Low expansion heat resistant glass. Used for Pyrex (trademark).
UF *Pyrex (trademark)*
GS glass
. **borosilicate glass**
RT glassware
honeycomb mirrors
silicon dioxide

Borsic (tradename)
DEF Trademark of United Aircraft Products, Inc. for its boron aluminum composite materials.
GS composite materials
. metal matrix composites
. . **Borsic (tradename)**
RT aluminum
boron
boron fibers
fiber composites
∞ materials
metal fibers
metals

Bose geometry
GS geometry
. **Bose geometry**
RT equations of state

Bose-Chaudhuri-Hocquenghem codes
USE **BCH codes**

Bose-Einstein condensates
(added February 1996)
GS condensates
. **Bose-Einstein condensates**
RT bosons
condensed matter physics
ideal gas
relativistic effects
superfluidity

Bose-Einstein statistics
USE **quantum statistics**

Bosnia
USE **Bosnia and Herzegovina**

Bosnia and Herzegovina
(added June 1996)
UF *Bosnia*
Herzegovina
GS nations
. **Bosnia and Herzegovina**
RT Croatia
Europe
Serbska Republic
Yugoslavia

boson fields
RT field theory (physics)
∞ fields
mesons

bosons
GS particles
. elementary particles
. . **bosons**
. . . alpha particles
. . . Higgs bosons
. . . mesons
. . . . eta-mesons
. . . . hyperons
. . . . . xi hyperons
. . . . kaons
. . . . meson resonance
. . . . . X mesons
. . . . muons
. . . . omega-mesons
. . . . pions
. . . . vector mesons
. . . . . rho-mesons
. . . . . sigma-mesons
. . . photons
. . . xi hyperons
. nuclear particles
. . **bosons**
. . . alpha particles
. . . Higgs bosons
. . . mesons
. . . . eta-mesons
. . . . hyperons
. . . . . xi hyperons
. . . . kaons
. . . . meson resonance
. . . . . X mesons
. . . . muons
. . . . omega-mesons
. . . . pions
. . . . vector mesons
. . . . . rho-mesons
. . . . . sigma-mesons
. . . photons
. . . xi hyperons
RT Bose-Einstein condensates
charged particles
Fermi-Dirac statistics
quantum statistics
standard model (particle physics)
string theory
supersymmetry

botany
GS botany
. geobotany
RT agriculture
alfalfa
barley
biogeochemistry
∞ biology
blight
brown wave effect
brush (botany)
chaparral
citrus trees
corn
farm crops
fruits
green wave effect
habitats
hay
leguminous plants
oats
plants (botany)
∞ science
silviculture
sugar beets
sugar cane
tomatoes
vegetation growth
vineyards
∞ zoology

Botswana
GS nations
. **Botswana**
RT Africa
Republic of South Africa

bottles
RT∞ containers
flasks
glassware
tanks (containers)

Bouguer law
DEF A relationship describing the rate of decrease of flux density of a plane-parallel beam of monochromatic radiation as it penetrates a medium which both scatters and absorbs at that wavelength. Used for Lambert law.
UF *Lambert law*
RT absorptivity
Beer law
electromagnetic absorption
thermoplasticity

boules
GS crystals
. **boules**
RT single crystals

bounderies
UF *peripheries*
GS **boundaries**
. core-mantle boundary
. fluid boundaries
. . gas-solid interfaces
. . jet boundaries
. . liquid-liquid interfaces
. . liquid-solid interfaces
. . liquid-vapor interfaces
. free boundaries
. grain boundaries
RT airspace
borders
boundary conditions
circumferences
contour sensors
delineation
fences (barriers)
interfaces
regions

boundary conditions
(added July 1990)
GS conditions
. **boundary conditions**
RT boundaries
boundary layers
boundary value problems
vortex lattice method

boundary detection (imagery)
USE **edge detection**

boundary element method
DEF Technique for solving two- and three-dimensional boundary value problems in thermodynamics, mechanics, etc.
GS stress analysis
. **boundary element method**
RT apertures

boundary integral method
DEF Technique related to the boundary element method, and used for laminar and turbulent flow problems.
GS analysis (mathematics)
. numerical analysis
. . **boundary integral method**
procedures
. **boundary integral method**
RT boundary value problems
∞ methodology

boundary layer combustion
GS combustion
. **boundary layer combustion**
RT boundary layers
combustible flow
convective heat transfer
diffusion flames
flame propagation
laminar boundary layer
reacting flow

boundary layer control
UF *laminar flow control*
GS **boundary layer control**
. porous boundary layer control
RT aerodynamics
airfoil fences
∞ bleeding
blowing
boundary layers
buffeting
circulation control airfoils
∞ control
control surfaces
drag devices
fluid amplifiers
flutter
jet control
leading edge slats
lift augmentation
lift devices
riblets
spoilers
tangential blowing
turbulence
upper surface blown flaps
vacuum
vortex generators
wing slots
X-21 aircraft

boundary layer equations
GS flow equations
. **boundary layer equations**
. . Blasius equation
RT boundary layers
differential equations
∞ equations
flow theory
Reynolds averaging

boundary layer flow
GS fluid flow
. viscous flow
. . **boundary layer flow**
. . . reattached flow
. . . secondary flow
. . . separated flow
. . . . boundary layer separation
RT air currents
atmospheric boundary layer
backward facing steps
Blasius equation
boundary layer thickness
convective heat transfer
flow distribution
forward facing steps
Lighthill gas model
Magnus effect
recirculative fluid flow
Reynolds number
stagnation flow
stagnation point
Tollmien-Schlichting waves
wall flow

boundary layer noise
USE **aerodynamic noise**
boundary layers

boundary layer plasmas
DEF Plasmas resulting from the frictional heat of hypersonic spacecraft entering the Earth's atmosphere.
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **boundary layer plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **boundary layer plasmas**
RT aerodynamic heating
aerothermodynamics
boundary layers
hypersonic reentry
plasma physics
plasma sheaths

boundary layer separation
UF *breakaway*
flow separation
laminar boundary layer separation
GS fluid flow
. viscous flow
. . boundary layer flow
. . . separated flow
. . . . **boundary layer separation**
RT aerodynamic stalling
airspeed
angle of attack
boundary layers
Crocco-Lee theory
∞ diffusers
Falkner-Skan equation
flow distribution
injection
Kutta-Joukowski condition
lift drag ratio
reattached flow
recirculative fluid flow
reversed flow
rotating stalls
∞ separation
stagnation flow
∞ stalling
sweep angle
vortex generators
zero lift

boundary layer stability
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . flow stability
. . . . **boundary layer stability**
. flow characteristics
. . flow stability
. . . **boundary layer stability**
stability
. dynamic stability
. . motion stability
. . . flow stability
. . . . **boundary layer stability**
RT aerodynamic stability
backwash
boundary layers
Goertler instability

Reynolds number

boundary layer thickness
(added September 1995)
SN (LIMITED TO FLUID DYNAMICS. DO NOT USE FOR PLANETARY OR CORE MANTLE BOUNDARIES)
GS thickness
. **boundary layer thickness**
RT boundary layer flow
flow distribution
pressure gradients
surface layers
transition flow

boundary layer transition
RT air currents
boundary layers
Ekman layer
Goertler instability
Knudsen flow
laminar boundary layer
laminar flow
molecular flow
Reynolds number
three dimensional boundary layer
Tollmien–Schlichting waves
∞ transition
transition flow
∞ transition layers
transition points
turbulence
turbulent boundary layer
turbulent flow

boundary layers
UF *boundary layer noise*
GS **boundary layers**
. atmospheric boundary layer
. compressible boundary layer
. hypersonic boundary layer
. incompressible boundary layer
. laminar boundary layer
. planetary boundary layer
. supersonic boundary layers
. thermal boundary layer
. three dimensional boundary layer
. turbulent boundary layer
. two dimensional boundary layer
RT asthenosphere
boundary conditions
boundary layer combustion
boundary layer control
boundary layer equations
boundary layer plasmas
boundary layer separation
boundary layer stability
boundary layer transition
core–mantle boundary
Crocco method
∞ drag
drag
fluid boundaries
fluid flow
gas–solid interfaces
∞ layers
liquid–liquid interfaces
liquid–solid interfaces
mixing layers (fluids)
panel method (fluid dynamics)
shear layers
surface layers
wall pressure

boundary lubrication
GS lubrication
. **boundary lubrication**
RT bearings
lubricants
squeeze films
vapor phase lubrication
wear resistance

boundary value problems
DEF Physical problems completely specified by a differential equation in an unknown, valid in a certain region of space, and certain information (boundary condition) about the unknown, given on the boundaries of that region. The information required to determine the solution depends completely and uniquely on the particular problem. Used for initial value problems and point matching method (mathematics).
UF *initial value problems*
point matching method (mathematics)
GS **boundary value problems**
. Cauchy problem
. Dirichlet problem
. Neumann problem
RT Bessel functions
boundary conditions
boundary integral method
counter rotation
Crank–Nicholson method
differential equations
finite element method
finite volume method
half planes
half spaces
Hankel functions
ill-posed problems (mathematics)
Lame functions
Mathieu function
minimal surfaces
Monge–Ampere equation
observability (systems)
∞ problems
Sobolev space
three dimensional bodies

Bourdon tubes
GS transducers
. pressure sensors
. . **Bourdon tubes**
RT pressure gages
pressure measurement
∞ tubes

Boussinesq approximation
DEF The assumption (frequently used in the theory of convection) that the fluid is incompressible except insofar as the thermal expansion produces a buoyancy.
RT convection
heat transfer
incompressible fluids
perturbation theory
thermal expansion

bow shock waves
USE **shock waves**

bow waves
DEF Shock waves in front of a body, such as an airfoil, or apparently attached to the forward tip of the body.
RT hypersonic wakes
Mach cones
magnetosheath
shock waves
surface waves

∞ **bows**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bending
camber
forebodies
heaving

box beams
GS structural members
. beams (supports)
. . **box beams**
RT ∞ boxes
cantilever beams
girders
rectangular beams

∞ **boxes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT box beams
boxes (containers)

boxes (containers)
RT ∞ boxes
∞ buckets
cases (containers)
∞ containers
packages

BPSK
USE **binary phase shift keying**

brackets
RT anchors (fasteners)
fasteners
fixtures
holders
mounting

bradycardia
GS rates (per time)
. heart rate
. . **bradycardia**
signs and symptoms
. **bradycardia**
RT heart diseases

Bragg angle
DEF The angle between the incident beam and the lattice planes considered.
GS geometry
. Euclidean geometry
. . angles (geometry)
. . . **Bragg angle**
RT Bragg gratings
Bragg reflectors
crystallography
DBR lasers
diffraction
diffraction paths
electron diffraction
isotropy
∞ orientation
∞ physical properties
radiography

Bragg cells
(added September 1988)
GS modulators
. **Bragg cells**
RT acousto-optics
amplitude modulation
crystal optics
light beams
light modulation
phase demodulators
phase modulation

ultrasonic light modulation

Bragg curve
DEF A curve showing the average specific ionization of an ionizing particle of a particular kind as a function of its kinetic energy, velocity, or residual range.
RT biological effects
nuclear reactions
particle interactions
radiation effects

Bragg gratings
(added August 1997)
GS gratings (spectra)
. **Bragg gratings**
RT Bragg angle
Bragg reflectors
interferometers
optical fibers
optical filters

Bragg mirrors
USE **Bragg reflectors**

Bragg reflectors
(added August 1997)
UF *Bragg mirrors*
GS reflectors
. **Bragg reflectors**
RT Bragg angle
Bragg gratings
DBR lasers
gallium arsenides
mirrors
semiconductor lasers

braided composites
(added November 1992)
GS composite materials
. fiber composites
. . **braided composites**
RT carbon fiber reinforced plastics
epoxy matrix composites
graphite–epoxy composites
reinforcing fibers
three dimensional composites
woven composites

braille
DEF A system of writing that uses characters made up of raised dots. It was named after Louis Braille.
RT blindness
embossing

brain
GS anatomy
. nervous system
. . central nervous system
. . . **brain**
. . . . brain stem
. . . . cerebellum
. . . . cerebral ventricles
. . . . cerebrum
. . . . . cerebral cortex
. . . . . occipital lobes
. . . . diencephalon
. . . . . hypothalamus
. . . . . pineal gland
. . . . . thalamus
. . . . hippocampus
RT angiography
brain circulation
brain damage
cerebrospinal fluid
echoencephalography
electroencephalography
encephalitis
head (anatomy)
information processing (biology)
intracranial pressure
neuroglia
neurology
pituitary gland
psychiatry
psychology
rheoencephalography
spinal cord

brain circulation
GS circulation
. blood circulation
. . **brain circulation**
RT brain
rheoencephalography

brain damage
GS injuries
. **brain damage**
RT brain

brain stem
GS anatomy
. nervous system
. . central nervous system
. . . brain
. . . . **brain stem**

∞ **brakes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT brakes (for arresting motion)
brakes (forming or bending)

brakes (for arresting motion)
UF *decelerators*
dragulators
GS **brakes (for arresting motion)**
. aerodynamic brakes
. . ballutes
. . drag chutes
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
. aircraft brakes
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
. wheel brakes
RT abort apparatus
antiskid devices
∞ arresters
arresting gear
∞ brakes
braking
cylindrical chambers
drag devices
flaps (control surfaces)
landing gear
nose wheels
parachutes
retarders (devices)
thrust reversal
towed bodies
vehicle wheels
wheels

brakes (forming or bending)
RT ∞ brakes
metal working

braking
RT brakes (for arresting motion)
deceleration
eddy currents
retarders (devices)
retarding
thrust reversal

branching (mathematics)
DEF The appearance of a new solution of a mathematical equation at some critical value of a parameter, as a result of which there may be more than one solution (different branches) of the equation. Used for bifurcation (mathematics)
UF *bifurcation (mathematics)*
GS **branching (mathematics)**
. period doubling
RT chaos
functions (mathematics)
∞ logic
mathematical logic
set theory
switching theory

branching (physics)
RT bifurcation (biology)
∞ physics

brasses
GS alloys
. copper alloys
. . **brasses**

Bravais crystals
GS crystals
. **Bravais crystals**
RT crystal growth
crystal lattices
crystal structure
packing density
single crystals

Brayton cycle
DEF A thermodynamic cycle consisting of two constant–pressure processes interspersed with two constant–entropy cycles. Named after George B. Brayton, American engineer.
GS cycles
. thermodynamic cycles
. . **Brayton cycle**
RT gas turbine engines
gas turbines
Rankine cycle
solar dynamic power systems

Brazil
GS nations
. **Brazil**
RT Amazon region (South America)
Brazilian space program
South America

Brazilian space program
DEF The space program of Brazil which is under the jurisdiction of the Instituto de Pesquisas Espaciais (INPE).
GS programs
. space programs
. . **Brazilian space program**
RT Brazil

brazing
GS welding
. fusion welding
. . gas welding

. . . **brazing**
. . . . low temperature brazing
RT fluxes
∞ joining
metal bonding
sealing
soldering
ultrasonic soldering

Brazzaville
USE **Congo (Brazzaville)**

breadboard models
DEF Assemblies of preliminary circuits or parts used to prove the feasibility of a device, circuit, system, or principle without regard to the final configuration or packaging of the parts.
GS models
. **breadboard models**
RT circuits
printed circuits
product development
prototypes

breakaway
USE **boundary layer separation**

∞ **breakdown**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT TERMS LISTED BELOW)
RT classifications
electrical faults
failure
gaps
metal working
system failures

breakers (electric)
USE **circuit breakers**

breaking
RT destruction
fragmentation
∞ separation

breakup (spacecraft)
USE **spacecraft breakup**

breakwaters
DEF Offshore structures (such as moles, walls, or jetties) that by breaking the force of waves, protect harbors, anchorages, beaches, or shore areas. Used for jetties and sea walls.
UF *jetties*
sea walls
RT concrete structures
harbors
littoral drift
littoral transport
oceanography
structural design
∞ structures
underwater engineering
underwater structures
water waves
∞ waves

∞ **breathing**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT argon–oxygen atmospheres
breathing apparatus
breathing vibration
emergency breathing techniques
expiration
helium–oxygen atmospheres
high altitude breathing
hypercapnia
hyperpnea
oxygen breathing
respiration
respiratory reflexes

breathing apparatus
GS **breathing apparatus**
. oxygen masks
. underwater breathing apparatus
RT ∞ breathing
∞ equipment
fire fighting
life support systems
oxygen supply equipment
portable life support systems
respirators

breathing vibration
GS vibration
. structural vibration
. . **breathing vibration**
RT bending vibration
∞ breathing
exhausting
missile vibration
venting

breccia
GS rocks
. **breccia**
RT ataxite
igneous rocks
regolith
sedimentary rocks
soils

breeder reactors
GS nuclear reactors
. **breeder reactors**
. . Experimental Breeder Reactor 1
. . Experimental Breeder Reactor 2
. . light water breeder reactors
. . liquid metal fast breeder reactors
RT Enrico Fermi atomic power plant
nuclear power reactors

breeding (reproduction)
RT fertility
genetics
heredity
reproduction (biology)

Breguet 1150 aircraft
UF *Atlantic aircraft*
GS antisubmarine warfare aircraft
. **Breguet 1150 aircraft**
attack aircraft
. **Breguet 1150 aircraft**
Breguet aircraft
. **Breguet 1150 aircraft**
jet aircraft
. turboprop aircraft
. . **Breguet 1150 aircraft**
monoplanes
. **Breguet 1150 aircraft**
reconnaissance aircraft
. **Breguet 1150 aircraft**
RT ∞ aircraft

Breguet 940 aircraft
GS Breguet aircraft
. **Breguet 940 aircraft**
monoplanes
. **Breguet 940 aircraft**
research vehicles
. research aircraft
. . **Breguet 940 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **Breguet 940 aircraft**
RT ∞ aircraft

Breguet 941 aircraft
GS **Breguet aircraft**
. **Breguet 941 aircraft**
jet aircraft
. turboprop aircraft
. . **Breguet 941 aircraft**
monoplanes
. **Breguet 941 aircraft**
passenger aircraft
. **Breguet 941 aircraft**
transport aircraft
. cargo aircraft
. . **Breguet 941 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **Breguet 941 aircraft**
RT ∞ aircraft

Breguet aircraft
GS **Breguet aircraft**
. Breguet 940 aircraft
. Breguet 941 aircraft
. Breguet 1150 aircraft
RT ∞ aircraft
Jaguar aircraft

bremsstrahlung
DEF Electromagnetic radiation produced by the rapid change in the velocity of an electron or another fast, charged particle as it approaches an atomic nucleus and is deflected by it. In German it means braking radiation.
GS electromagnetic radiation
. **bremsstrahlung**
RT Cerenkov radiation
diffraction radiation
electron photon cascades
electron radiation
far ultraviolet radiation
gamma ray bursts
gamma rays
nuclear radiation
relativistic plasmas
synchrotron radiation
x rays

Brewster angle
GS geometry
. Euclidean geometry
. . angles (geometry)
. . . **Brewster angle**
RT polarization characteristics
reflection
refractivity

bricks
DEF Solid masonry units of clay or shale, usually formed into a rectangular prism while plastic and burned or fired in a kiln. Bricks are ceramic products.
GS masonry
. **bricks**
RT cements
ceramics
clays
∞ construction materials
mortars (material)

∞ **bridges**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bridges (landforms)
bridges (structures)
electric bridges

liquid bridges

bridges (landforms)
GS landforms
. **bridges (landforms)**
RT∞ bridges
geology
∞ ridges

bridges (structures)
RT∞ bridges
construction
construction industry
crossings
crossovers
highways
ramps (structures)
∞ structures
towers

Bridgman method
RT crystal growth
∞ methodology
single crystals

brightness
DEF The attribute of visual perception in accordance with which an area appears to emit more or less light.
GS electromagnetic properties
. optical properties
. . **brightness**
. . . sky brightness
RT bistatic reflectivity
brightness distribution
color
dimming
emissivity
flux (rate)
glare
human factors engineering
illuminance
illuminating
incandescence
∞ intensity
light (visible radiation)
limb brightening
luminance
luminescence
luminosity
luminous intensity
luster
radiance
radiant flux density
reflectance
stellar luminosity
visibility
vision

brightness discrimination
GS discrimination
. sensory discrimination
. . **brightness discrimination**
RT∞ illumination
visual perception

brightness distribution
DEF The statistical distribution based on brightness, or the distribution of brightness over the surface of an object.
GS distribution (property)
. **brightness distribution**
electromagnetic properties
. optical properties
. . **brightness distribution**
statistical distributions
. **brightness distribution**
RT astrophysics
black body radiation
brightness
brightness temperature
∞ distribution
galactic radiation
photography
radiant flux density
radio astronomy
solar granulation
stellar luminosity

brightness temperature
DEF In astrophysics, the temperature of a black body radiating the same amount of energy per unit area at the wavelengths under consideration as the observed body. The temperature of a nonblack body determined by measurement with an optical pyrometer.
GS temperature
. **brightness temperature**
RT astrophysics
black body radiation
brightness distribution
limb brightening
meteorology
photography
radio astronomy
temperature measurement

Brillouin effect
RT∞ effects
frequency shift
light scattering
monochromatic radiation

Brillouin flow
GS electric current
. **Brillouin flow**
RT beam currents
electron beams
electron optics
∞ flow
traveling wave tubes

Brillouin zones
GS regions
. **Brillouin zones**
RT band structure of solids
conduction bands
crystal lattices
Fermi surfaces
free electrons

Brillouin–Wigner equation
RT∞ equations

brines
DEF Water saturated or strongly impregnated with common salt.
RT coolants
refrigerants
salinity
salt baths
salt beds
sea water

briquets
RT blanks
pellets
tablets

Bristol–Siddeley BS 53 engine
UF *Pegasus engine*
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **Bristol–Siddeley BS 53 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **Bristol–Siddeley BS 53 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **Bristol–Siddeley BS 53 engine**
RT P–1127 aircraft

Bristol–Siddeley Olympus 593 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . **Bristol–Siddeley Olympus 593 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . **Bristol–Siddeley Olympus 593 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . **Bristol–Siddeley Olympus 593 engine**

Bristol–Siddeley Viper engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . **Bristol–Siddeley Viper engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . **Bristol–Siddeley Viper engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . **Bristol–Siddeley Viper engine**

British Aircraft Corp aircraft
USE **BAC aircraft**

British Columbia
GS nations
. Canada
. . **British Columbia**

British Guiana
USE **Guyana**

British Honduras
USE **Belize**

brittle materials
RT cleavage
cracking (fracturing)
embrittlement
fracture strength
granular materials

hardness
impact strength
∞ materials
porous materials

brittle–ductile transition
USE **ductile–brittle transition**

brittleness
GS mechanical properties
. **brittleness**
RT Charpy impact test
cleavage
cold hardening
crack closure
crack initiation
crack propagation
cracking (fracturing)
ductile–brittle transition
ductility
embrittlement
fractography
fracture strength
fracturing
hardness
impact strength
impact tests
notch strength
notch tests
toughness
weldability

broadband
UF *wideband*
GS bandwidth
. **broadband**
frequencies
. **broadband**
RT asynchronous transfer mode
∞ bands
frequency response
log periodic antennas
narrowband
spiral antennas

broadband amplifiers
GS amplifiers
. **broadband amplifiers**
RT bandwidth
frequencies
wideband communication

broadcasting
UF *radio broadcasting*
GS telecommunication
. **broadcasting**
RT communication networks
direct broadcast satellites
radio communication
radio equipment
radio signals
radio transmission
Symphonie satellites
transmission
Voice of America

broken symmetry
DEF Phenomena where a loss of symmetry is present such as in piezoelectricity. Used for symmetry breaking.
UF *symmetry breaking*
GS symmetry
. **broken symmetry**
RT grand unified theory
Higgs bosons
mathematical models
supergravity
supersymmetry
theoretical physics

bromates
GS halogen compounds
. bromine compounds
. . **bromates**
RT ∞ oxygen compounds

bromides
GS halogen compounds
. bromine compounds
. . **bromides**
. . . ammonium bromides
. . . cesium bromides
. . . chromium bromides
. . . dibromides
. . . hydrobromic acid
. . . hydrobromides
. . . magnesium bromides
. . . potassium bromides
. . . silver bromides
. . . sodium bromides
. . . strontium bromides
. halides
. . **bromides**
. . . ammonium bromides
. . . cesium bromides
. . . chromium bromides
. . . dibromides
. . . hydrobromic acid
. . . hydrobromides
. . . magnesium bromides
. . . potassium bromides
. . . silver bromides
. . . sodium bromides
. . . strontium bromides
RT salt beds

bromination
GS chemical reactions
. halogenation
. . **bromination**

bromine
GS chemical elements
. halogens
. . **bromine**
. . . bromine isotopes

bromine 82
USE **bromine isotopes**

bromine 87
USE **bromine isotopes**

bromine compounds
GS halogen compounds
. **bromine compounds**
. . bromates
. . bromides
. . . ammonium bromides
. . . cesium bromides
. . . chromium bromides
. . . dibromides
. . . hydrobromic acid
. . . hydrobromides
. . . magnesium bromides
. . . potassium bromides
. . . silver bromides
. . . sodium bromides
. . . strontium bromides
RT ∞ chemical compounds
halocarbons
polybrominated biphenyls

bromine isotopes
UF *bromine 82*
bromine 87
GS chemical elements
. halogens
. . bromine
. . . **bromine isotopes**
. nuclides
. . isotopes
. . . **bromine isotopes**

bronchi
UF *bronchial tubes*
GS anatomy
. respiratory system
. . **bronchi**
RT lungs
trachea
∞ tubes

bronchial tubes
USE **bronchi**

bronzes
GS alloys
. copper alloys
. . **bronzes**

Bronsen–Metcalf comet
(added May 1991)
GS celestial bodies
. comets
. . **Bronsen–Metcalf comet**
RT solar system

broths
RT ∞ food
nutrition

brown dwarf stars
(added March 1989)
GS celestial bodies
. stars
. . **brown dwarf stars**
RT companion stars
cool stars
dwarf stars
protostars
stellar evolution

brown wave effect
RT annual variations
botany
chlorophylls
∞ effects
foliage
leaves

Brownian movements
RT colloids
dispersions
Einstein equations
emulsions
Fokker–Planck equation
∞ motion
∞ suspensions

Bruceton test
USE **statistical tests**

brucite
GS chalcogenides
. oxides
. . **brucite**
magnesium compounds
. **brucite**
minerals
. **brucite**

Bruderheim meteorite
GS celestial bodies
. meteorites
. . stony meteorites
. . . chondrites

. . . . **Bruderheim meteorite**

Brunei
GS nations
. **Brunei**
RT Asia

Brunt–Vaisala frequency
DEF The frequency at which an air parcel will oscillate when subjected to an infinitesimal peturbation in a stably stratified atmosphere.
GS constraints
. meteorological parameters
. . **Brunt–Vaisala frequency**
frequencies
. **Brunt–Vaisala frequency**
RT air currents
air flow
air masses
atmospheric circulation
atmospheric physics
atmospheric stratification
oscillations

brush (botany)
UF *scrubs (botany)*
GS plants (botany)
. **brush (botany)**
. . chaparral
RT botany
defoliation
Earth resources
guayule
herbicides

brush seals
(added July 1991)
GS seals (stoppers)
. **brush seals**
RT leakage

brushes
GS **brushes**
. brushes (electrical contacts)
RT electric contacts
electric generators
electric motors

brushes (electrical contacts)
DEF Conductive metal or carbon blocks used to make sliding electrical contact with a moving part as in an electric motor.
GS brushes
. **brushes (electrical contacts)**
RT electric contacts
electric generators
electric motors

Bryophytes
UF *liverworts*
mosses
GS plants (botany)
. **Bryophytes**

BSCCO superconductors
(added March 1993)
UF *Bi–Sr–Ca–Cu–O superconductors*
GS chalcogenides
. oxides
. . metal oxides
. . . mixed oxides
. . . . **BSCCO superconductors**
conductors
. superconductors (materials)
. . high temperature superconductors
. . . **BSCCO superconductors**
RT bismuth oxides
calcium oxides
copper oxides
strontium oxides
superconducting films

BSX
GS explosives
. **BSX**
RT nitromethane

bubble chambers
DEF Devices used for the detection and study of elementary particles and nuclear reactions. Charged particles from an accelerator are introduced into a superheated liquid, each forming a trail of bubbles along its path.
GS ionization chambers
. **bubble chambers**
RT ∞ chambers
cloud chambers
elementary particles
particle trajectories
radiation counters
spark chambers

bubble memory devices
GS computer components
. computer storage devices
. . **bubble memory devices**
magnetic storage
. **bubble memory devices**
RT binary data
core storage
data processing
data recorders
data recording
data storage
magnetic cores
magnetic domains
magnetic recording
magnetic switching

bubble technique
GS technologies
. **bubble technique**
RT data recorders
electronic equipment
flight instruments
∞ instruments
magnetic domains
onboard equipment
recording instruments
semiconductor devices
solid state devices
spacecraft instruments

bubbles
DEF Internal voids or trapped globules of air or other gas.
RT aeration
cavitation flow
Coanda effect
effervescence
foams
metal foams
wakes

Buccaneer aircraft
UF *B–103 aircraft*
Blackburn B–103 aircraft
GS attack aircraft
. **Buccaneer aircraft**
Hawker Siddeley aircraft
. **Buccaneer aircraft**
jet aircraft
. **Buccaneer aircraft**
monoplanes
. **Buccaneer aircraft**
RT ∞ aircraft
Harrier aircraft

bucket brigade devices
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . charge transfer devices
. . . . **bucket brigade devices**
RT charge coupled devices
semiconductors (materials)

∞ **buckets**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT boxes (containers)
∞ capsules
drums (containers)
trays
turbomachine blades

buckeye aircraft
USE **T–2 aircraft**

buckling
DEF An unstable state of equilibrium of a thin–walled body stemming from compressive stresses in walls. The lateral deflection of a thin–walled body resulting from such instability.
GS **buckling**
. creep buckling
. elastic buckling
. Euler buckling
. thermal buckling
RT bending
collapse
compression loads
deformation
distortion
Donnell equations
failure
failure modes
flange wrinkling
heaving
∞ ridges
shell stability
stresses
structural failure
structural strain
temperature inversions
torsion
twisting
warpage
wrinkling

buckminsterfullerene
(added August 1991)
DEF A form of solid carbon consisting of a somewhat disordered hexagonal close packing of soccer–ball–shaped C60 molecules. The molecules are extremely hard pseudospherical molecules bonded by weak Van der Waals forces.
GS fullerenes
. **buckminsterfullerene**
RT carbon
graphite
molecules
polyatomic molecules
polyhedrons

budgeting
RT accounting
allocations
appropriations
∞ budgets
cost analysis
cost effectiveness
cost estimates
economic factors
estimating

financial management
forecasting
grants
income
mission planning
planning
procurement management
project planning
revenue

∞ **budgets**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT budgeting
Earth radiation budget
energy budgets
engineering management
federal budgets
foreign policy
heat budget
procurement management
research management

Buffalo aircraft
USE **DHC 5 aircraft**

buffer storage
DEF In computer operations, storage used to compensate for a difference in rate of flow or time of occurrence when transferring information from one device to another.
GS computer components
. computer storage devices
. . **buffer storage**
RT ∞ buffers
core storage
data storage
∞ storage

∞ **buffers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT buffer storage
buffers (chemistry)

buffers (chemistry)
RT bases (chemical)
∞ buffers
chemical equilibrium
neutralizers
pH

buffeting
DEF The beating of an aerodynamic structure or surfaces by unsteady flow, gusts, etc.; the irregular shaking or oscillation of a vehicle component owing to turbulent air or separated flow.
RT aerodynamic stability
aircraft stability
boundary layer control
compressibility effects
flight characteristics
flutter
oscillating flow
shaking
spacecraft motion
spacecraft stability
Strouhal number
turbulence effects
vortex avoidance

building materials
USE **construction materials**

building structures
USE **buildings**

buildings
DEF Structures erected and framed of component structural members designed for the housing, shelter or support of persons, animals, or property. Used for building structures.
UF *building structures*
RT architecture
basements
ceilings (architecture)
chimneys
construction
construction industry
floors
greenhouses
hangars
indoor air pollution
inflatable structures
missile silos
museums
roofs
shelters
solar houses
stairways
Starsite program
walls

bulbs
RT luminaires
plant roots
pressure vessels
syringes

Bulgaria
GS nations
. **Bulgaria**
RT Black Sea
Europe

bulging
GS metal working
. **bulging**
RT deep drawing
dimpling
explosive forming
forging
hot working
magnetic forming
metal drawing
stretch forming

bulk acoustic wave devices
DEF Acoustooptic devices utilizing bulk sound waves at megahertz frequencies in thin film transducers. Used for B–A–W devices.
UF *B–A–W devices*
RT ∞ devices
surface acoustic wave devices
transducers

bulk modulus
DEF The reciprocal of the coefficient of compressibility.
GS mechanical properties
. **bulk modulus**
RT compressibility
density (mass/volume)

bulkheads
DEF Steep or vertical structures supporting natural or artificial embankments.
GS walls
. **bulkheads**
RT ∞ barriers
end plates
hulls (structures)
partitions (structures)
reinforcement (structures)
thick walls
thin walls

Bullpup missiles
GS missiles
. air to surface missiles
. . **Bullpup missiles**
RT LR–62–RM–2 engine

Bumblebee project
GS missiles
. **Bumblebee project**
programs
. projects
. . **Bumblebee project**
RT Talos missile
tartar missile
terrier missile
Typhon weapon system

bumpers
RT cushions
meteoroid protection
meteoroids
protectors

bumpy toruses
DEF The shapes (doughnuts) of certain plasmas.
RT fusion reactors
plasma control
plasma heating
tokamak devices
toroidal plasmas

Buna (trademark)
GS elastomers
. rubber
. . synthetic rubbers
. . . **Buna (trademark)**
RT butadiene
styrenes

bunching
GS **bunching**
. electron bunching
RT queueing theory
space charge
velocity modulation

bundle drawing
RT ∞ drawing
metal drawing

bundles
RT ∞ containers
packages
umbilical connectors
wiring

bunkers (fuel)
GS tanks (containers)
. **bunkers (fuel)**
RT fuel systems

Buoyancy
RT acoustic levitation
aerostatics
ballast (mass)
density (mass/volume)
floating
gas density
levitation
mechanical properties
neutral buoyancy simulation
∞ physical properties
porosity
Rayleigh number
voids

buoys
RT beacons
compasses
floats
∞ markers
navigation aids
ocean data acquisitions systems

Buran space shuttle
(added August 1989)
GS manned spacecraft
. space shuttles
. . **Buran space shuttle**
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . space shuttles
. . . . **Buran space shuttle**
soft landing spacecraft
. **Buran space shuttle**
Soviet spacecraft
. **Buran space shuttle**
RT aerospace planes
U.S.S.R. space program

bureaus (organizations)
GS institutions
. **bureaus (organizations)**
organizations
. federations
. . **bureaus (organizations)**
RT programs
projects
teams
university program

burettes
GS measuring instruments
. **burettes**
RT glassware
pipettes
∞ tubes

Burger equation
GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **Burger equation**
RT continuum mechanics
∞ equations
Navier–Stokes equation
shock wave propagation

Burkina
UF *Upper Volta*
GS nations
. **Burkina**
RT Africa

Burma
GS nations
. **Burma**
RT Asia

burn-in
RT failure
failure analysis
integrated circuits
quality control

burners
RT afterburning
chemical reactors
combustion chambers
diffusion welding
fuel injection
furnaces
incinerators
waste energy utilization

Burnett equations
(added March 1996)
SN *(These equations are frequently associated with models of hypersonic flow and shock waves.)*
GS equations of motion
. kinetic equations
. . hydrodynamic equations
. . . **Burnett equations**
flow equations
. **Burnett equations**
RT Boltzmann transport equation
Chapman–Enskog theory
computational fluid dynamics
hypersonic flow
shock waves

burning
USE **combustion**

burning process
USE **combustion**

burning rate
DEF The velocity at which a solid propellant in a rocket is consumed. The symbol is r.
GS rates (per time)
. **burning rate**
RT burnout
combustion
combustion control
combustion efficiency
combustion stability
explosives
flame propagation
flammability
fuel consumption
fuel–air ratio
fuels
pressure dependence
propellant consumption
propellant grains
propellants
smoldering
solid propellant combustion
solid propellant rocket engines
solid rocket propellants
velocity coupling

burning time
UF *firing time*
GS time
. **burning time**
RT combustion
combustion efficiency
firing (igniting)
flight optimization
flight time
rocket engines
rocket firing
testing time
thrust
windows (intervals)

burnout
SN (LIMITED TO TERMINATION OF COMBUSTION IN A ROCKET ENGINE BECAUSE OF EXHAUSTION OF THE PROPELLANT)
DEF The termination of combustion in a rocket engine because of exhaustion of the propellant.
RT booster rocket engines
burning rate
combustion
∞ cut-off
erosive burning
extinguishing
solid propellant rocket engines
thrust termination

burns (injuries)
GS injuries
. **burns (injuries)**
RT crash injuries
fires
laser damage
lesions
radiation injuries

burnthrough (failure)
GS failure
. **burnthrough (failure)**
RT ablation
damage
melting
perforating

burst tests
GS destructive tests
. **burst tests**
RT containment
failure analysis
fracture mechanics
fracture strength
∞ materials tests
pressure vessels

bursts
GS **bursts**
. gamma ray bursts
. radio bursts
. . solar radio bursts
. . . type 2 bursts
. . . type 3 bursts
. . . type 4 bursts
. . . type 5 bursts
RT ∞ disturbances
emission
explosions
fragmentation
implosions
rupturing

bursts (communication)
USE **packets (communication)**

Burundi
UF *Ruanda–Urundi*
GS nations
. **Burundi**
RT Africa
Rwanda

bus conductors
GS conductors
. **bus conductors**
RT electric wire
flat conductors
power lines
∞ power transmission

bushings
RT bearings
inserts
linings
shafts (machine elements)
spacers

business management
USE **industrial management**

butadiene
UF *vinyl ethylene*
GS organic compounds
. hydrocarbons

. . aliphatic hydrocarbons
. . . dienes
. . . . butadiene
RT Buna (trademark)
hydrocarbon fuels
polybutadiene

butanes
UF *isobutane*
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . butanes
RT petroleum products

butenes
UF *butylene*
isobutylene
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkenes
. . . . butenes

butt joints
GS joints (junctions)
. butt joints
RT lap joints
metal joints
riveted joints
soldered joints
welded joints

butterfly valves
GS valves
. butterfly valves
. . dampers (valves)

buttes
GS landforms
. terraces (landforms)
. . plateaus
. . . mesas
. . . . buttes

∞ **buttons**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT manual control

butylene
USE **butenes**

butylene oxides
USE **tetrahydrofuran**

butyric acid
GS acids
. butyric acid
RT fermentation

by-products
RT materials recovery
products
reaction products
wastes

bypass ratio
DEF Ratio of the secondary to the primary inlet airflows for a turbofan engine.
GS ratios
. bypass ratio
RT air intakes
engine inlets
flow geometry
hypersonic inlets
inlet airframe configurations
inlet flow
inlet nozzles
intake systems
nose inlets
side inlets
supersonic inlets

bypasses
UF *shunts*
RT diverters
relief valves

C

C (programming language)
(added July 1988)
GS languages
. programming languages
. . high level languages
. . . **C (programming language)**
. . . . C++ (programming language)
RT compilers
computer programming
expert systems

C band
SN (3.9 TO 6.2 GHZ)
GS frequencies
. radio frequencies
. . microwave frequencies
. . . **C band**
RT millimeter waves
superhigh frequencies

C stars
USE **carbon stars**

C++ (programming language)
(added October 1991)
GS languages
. programming languages
. . high level languages
. . . C (programming language)
. . . . **C++ (programming language)**
RT object-oriented programming

C-1A aircraft
UF *Trader aircraft*
GS Grumman aircraft
. **C-1A aircraft**
transport aircraft
. cargo aircraft
. . **C-1A aircraft**
RT∞ aircraft
∞ military aircraft

C-2 aircraft
UF *COD aircraft*
GS Grumman aircraft
. **C-2 aircraft**
jet aircraft
. turboprop aircraft
. . **C-2 aircraft**
monoplanes
. **C-2 aircraft**
transport aircraft
. cargo aircraft
. . **C-2 aircraft**
RT∞ aircraft

C-5 aircraft
UF *Galaxy aircraft*
Lockheed C-5 aircraft
GS jet aircraft
. **C-5 aircraft**
Lockheed aircraft
. **C-5 aircraft**
transport aircraft
. cargo aircraft
. . **C-5 aircraft**
RT∞ aircraft
turbofan engines

C-8A augmentor wing aircraft
DEF NASA's research, short haul, jet aircraft.
GS jet aircraft
. **C-8A augmentor wing aircraft**
research vehicles
. research aircraft
. . **C-8A augmentor wing aircraft**
transport aircraft
. short haul aircraft
. . **C-8A augmentor wing aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **C-8A augmentor wing aircraft**
RT∞ aircraft

C-9 aircraft
GS jet aircraft
. **C-9 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **C-9 aircraft**
. Mcdonnell aircraft
. . **C-9 aircraft**
transport aircraft
. cargo aircraft
. . **C-9 aircraft**
RT∞ aircraft
evacuating (transportation)

C-15 aircraft
UF *YC-15 aircraft*
GS transport aircraft
. cargo aircraft
. . **C-15 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **C-15 aircraft**
RT∞ aircraft

C-17 aircraft
(added August 1995)
GS McDonnell Douglas aircraft
. **C-17 aircraft**
transport aircraft
. cargo aircraft
. . **C-17 aircraft**
RT∞ aircraft
turbofan engines

C-33 aircraft
UF *Beech C-33 aircraft*
Debonair aircraft
GS Beechcraft aircraft
. Beech 99 aircraft
. . **C-33 aircraft**
general aviation aircraft
. **C-33 aircraft**
light aircraft
. Beech 99 aircraft
. . **C-33 aircraft**
monoplanes
. **C-33 aircraft**
passenger aircraft
. **C-33 aircraft**
transport aircraft
. cargo aircraft
. . **C-33 aircraft**
RT∞ aircraft

C-35 aircraft
UF *Beech S-35 aircraft*
Bonanza aircraft
GS Beechcraft aircraft
. Beech 99 aircraft
. . **C-35 aircraft**
general aviation aircraft
. **C-35 aircraft**
light aircraft
. Beech 99 aircraft
. . **C-35 aircraft**
monoplanes
. **C-35 aircraft**
passenger aircraft
. **C-35 aircraft**
transport aircraft
. cargo aircraft
. . **C-35 aircraft**
RT∞ aircraft

C-46 aircraft
UF *Commando aircraft*
Curtiss C-46 aircraft
GS Curtiss-Wright aircraft
. **C-46 aircraft**
monoplanes
. **C-46 aircraft**
passenger aircraft
. **C-46 aircraft**
transport aircraft
. cargo aircraft
. . **C-46 aircraft**
RT∞ aircraft

C-47 aircraft
UF *Dakota aircraft*
GS McDonnell Douglas aircraft
. Douglas aircraft
. . **C-47 aircraft**
monoplanes
. **C-47 aircraft**
transport aircraft
. cargo aircraft
. . **C-47 aircraft**
RT∞ aircraft

C-54 aircraft
UF *R5D aircraft*
Skymaster aircraft
GS McDonnell Douglas aircraft
. Douglas aircraft
. . **C-54 aircraft**
monoplanes
. **C-54 aircraft**
transport aircraft
. cargo aircraft
. . **C-54 aircraft**
RT∞ aircraft

C-118 aircraft
GS McDonnell Douglas aircraft
. Douglas aircraft
. . **C-118 aircraft**
monoplanes
. **C-118 aircraft**
transport aircraft
. cargo aircraft
. . **C-118 aircraft**
RT∞ aircraft

C-119 aircraft
GS Fairchild-Hiller aircraft
. **C-119 aircraft**
transport aircraft
. cargo aircraft
. . **C-119 aircraft**
RT∞ aircraft

C-121 aircraft
UF *EC-121 aircraft*
Lockheed Constellation aircraft
R7V aircraft
Warning Star aircraft
GS Lockheed aircraft
. **C-121 aircraft**
monoplanes

. C-121 aircraft
transport aircraft
. cargo aircraft
. . C-121 aircraft
RT ∞ aircraft
passenger aircraft

C-123 aircraft
UF *Provider aircraft*
YC-123 aircraft
GS Fairchild-Hiller aircraft
. C-123 aircraft
monoplanes
. C-123 aircraft
transport aircraft
. cargo aircraft
. . C-123 aircraft
V/STOL aircraft
. short takeoff aircraft
. . C-123 aircraft
RT ∞ aircraft

C-124 aircraft
GS McDonnell Douglas aircraft
. Douglas aircraft
. . C-124 aircraft
monoplanes
. C-124 aircraft
transport aircraft
. cargo aircraft
. . C-124 aircraft
RT ∞ aircraft

C-130 aircraft
UF *GC-130 aircraft*
Hercules aircraft
JC-130 aircraft
KC-130 aircraft
NC-130 aircraft
GS jet aircraft
. turboprop aircraft
. . C-130 aircraft
Lockheed aircraft
. C-130 aircraft
monoplanes
. C-130 aircraft
transport aircraft
. cargo aircraft
. . C-130 aircraft
RT ∞ aircraft
T-56 engine

C-131 aircraft
UF *Samaritan aircraft*
GS General Dynamics aircraft
. C-131 aircraft
monoplanes
. C-131 aircraft
transport aircraft
. cargo aircraft
. . C-131 aircraft
RT ∞ aircraft

C-133 aircraft
UF *Cargomaster aircraft*
GS jet aircraft
. turboprop aircraft
. . C-133 aircraft
McDonnell Douglas aircraft
. Douglas aircraft
. . C-133 aircraft
monoplanes
. C-133 aircraft
transport aircraft
. cargo aircraft
. . C-133 aircraft
RT ∞ aircraft
T-34 engine

C-135 aircraft
UF *EC-135 aircraft*
KC-135 aircraft
Stratotanker aircraft
GS Boeing aircraft
. C-135 aircraft
jet aircraft
. C-135 aircraft
monoplanes
. C-135 aircraft
transport aircraft
. cargo aircraft
. . C-135 aircraft
RT Advanced Range Instrumentation Aircraft
∞ aircraft
turbofan aircraft

C-140 aircraft
UF *Jet Star aircraft*
GS jet aircraft
. C-140 aircraft
Lockheed aircraft
. C-140 aircraft
monoplanes
. C-140 aircraft
transport aircraft
. cargo aircraft
. . C-140 aircraft
RT ∞ aircraft

C-141 aircraft
UF *Starlifter aircraft*
GS jet aircraft
. turbofan aircraft
. . C-141 aircraft
Lockheed aircraft
. C-141 aircraft
monoplanes
. C-141 aircraft
transport aircraft
. cargo aircraft
. . C-141 aircraft
RT ∞ aircraft
Kuiper Airborne Observatory
turbofan engines

C-142 aircraft
USE **KC-142 aircraft**

C-160 aircraft
UF *Transall C-160 aircraft*
GS Hamburger aircraft
. C-160 aircraft
jet aircraft
. turboprop aircraft
. . C-160 aircraft
monoplanes
. C-160 aircraft
Nord aircraft
. C-160 aircraft
transport aircraft
. cargo aircraft
. . C-160 aircraft
RT ∞ aircraft
turboprop engines

C-M diagram
USE **color-magnitude diagram**

cabin atmospheres
GS controlled atmospheres
. cabin atmospheres
. . spacecraft cabin atmospheres
RT aircraft compartments
∞ atmospheres
cockpits
environmental control
oxygen supply equipment
pressurized cabins
space capsules

∞ **cabins**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aircraft compartments
cockpits
pressurized cabins
spacecraft cabins

cable force recorders
GS recording instruments
. cable force recorders
RT ∞ recorders
strain gages
tensiometers

cable television
(added December 1990)
UF *CATV*
GS television systems
. cable television
RT closed circuit television
communication cables
television transmission

∞ **cables**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cables (ropes)
coaxial cables
communication cables
power lines
submarine cables
tetherlines
transmission lines

cables (ropes)
RT ∞ belts
∞ cables
chains
cordage
fasteners
reels
strands
towing
wire

CAD (design)
USE **computer aided design**

cadastral mapping
DEF Large-scale mapping for showing the boundaries of subdivisions of land, usually with the directions and lengths thereof and the areas of individual tracts, compiled for the purpose of describing and recording ownership. The map may also show culture, drainage, and other features related to the use of the land.
GS mapping
. cadastral mapping
RT geography
maps
thematic mapping

cadmium
GS chemical elements
. cadmium
. . cadmium isotopes
metals
. transition metals
. . cadmium
. . . cadmium isotopes

cadmium 114
USE **cadmium isotopes**

cadmium alloys
GS alloys
. **cadmium alloys**
RT bearing alloys

cadmium antimonides
GS antimony compounds
. antimonides
. . **cadmium antimonides**
cadmium compounds
. **cadmium antimonides**

cadmium chlorides
GS cadmium compounds
. **cadmium chlorides**
halogen compounds
. chlorine compounds
. . chlorides
. . . **cadmium chlorides**
. halides
. . chlorides
. . . **cadmium chlorides**
. . metal halides
. . . **cadmium chlorides**

cadmium compounds
GS **cadmium compounds**
. cadmium antimonides
. cadmium chlorides
. cadmium fluorides
. cadmium selenides
. cadmium sulfides
. cadmium tellurides
RT∞ chemical compounds
Group 2B compounds
∞ metal compounds

cadmium fluorides
GS cadmium compounds
. **cadmium fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **cadmium fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **cadmium fluorides**
. . metal halides
. . . metal fluorides
. . . . **cadmium fluorides**

cadmium isotopes
UF *cadmium 114*
GS chemical elements
. cadmium
. . **cadmium isotopes**
. nuclides
. . isotopes
. . . **cadmium isotopes**
metals
. transition metals
. . cadmium
. . . **cadmium isotopes**

cadmium mercury tellurides
USE **mercury cadmium tellurides**

cadmium nickel batteries
USE **nickel cadmium batteries**

cadmium selenides
GS cadmium compounds
. **cadmium selenides**
chalcogenides
. selenides
. . **cadmium selenides**
selenium compounds
. selenides
. . **cadmium selenides**

cadmium silver batteries
USE **silver cadmium batteries**

cadmium sulfides
GS cadmium compounds
. **cadmium sulfides**
chalcogenides
. sulfides
. . inorganic sulfides
. . . **cadmium sulfides**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **cadmium sulfides**

cadmium tellurides
GS cadmium compounds
. **cadmium tellurides**
chalcogenides
. tellurides
. . **cadmium tellurides**
tellurium compounds
. tellurides
. . **cadmium tellurides**

caffeine
GS bases (chemical)
. alkaloids
. . **caffeine**
drugs
. stimulants
. . **caffeine**
fungicides
. xanthines
. . **caffeine**
nitrogen compounds
. alkaloids
. . **caffeine**
. xanthines
. . **caffeine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . alkaloids
. . . . **caffeine**
. . . purines
. . . . xanthines
. . . . . **caffeine**

CAI
USE **computer assisted instruction**

caissons
RT construction
foundations

Cajun rocket vehicle
GS rocket vehicles
. sounding rockets
. . **Cajun rocket vehicle**
RT Nike-Cajun rocket vehicle
solid propellant rocket engines
sondes

calciferol
UF *vitamin D*
GS organic compounds
. lipids
. . **calciferol**
vitamins
. **calciferol**

calcification
RT arthritis
bones

calcination
USE **roasting**

calcite
GS calcium compounds
. calcium carbonates
. . **calcite**
carbon compounds
. carbonates
. . calcium carbonates
. . . **calcite**
minerals
. **calcite**
RT aragonite
birefringence

calcium
GS chemical elements
. **calcium**
. . calcium isotopes
metals
. **calcium**
. . calcium isotopes
RT calmodulin
gypsum

calcium 45
USE **calcium isotopes**

calcium carbonates
GS calcium compounds
. **calcium carbonates**
. . **akermanite**
. . **aragonite**
. . **calcite**
. . **chalk**
carbon compounds
. carbonates
. . **calcium carbonates**
. . . **akermanite**
. . . **aragonite**
. . . **calcite**
. . . **chalk**
RT bone mineral content
limestone

calcium chlorides
GS calcium compounds
. **calcium chlorides**
halogen compounds
. chlorine compounds
. . chlorides
. . . **calcium chlorides**
. halides
. . chlorides
. . . **calcium chlorides**
. . metal halides
. . . **calcium chlorides**

calcium compounds
GS **calcium compounds**
. calcium carbonates
. . akermanite
. . aragonite
. . calcite
. . chalk
. calcium chlorides
. calcium fluorides
. . fluorspar
. calcium oxides
. . akermanite
. calcium phosphates
. calcium silicates
. . gehlenite
. calcium sulfides
. calcium tungstates
. calcium vanadates
. fluorite

. merwinite
. monticellite
. perovskites
. scheelite
RT ∞ alkaline earth compounds
∞ chemical compounds
∞ metal compounds

calcium fluorides
GS calcium compounds
. **calcium fluorides**
. . fluorspar
halogen compounds
. fluorine compounds
. . fluorides
. . . difluorides
. . . . **calcium fluorides**
. . . . . fluorspar
. . . metal fluorides
. . . . **calcium fluorides**
. . . . . fluorspar
. halides
. . fluorides
. . . difluorides
. . . . **calcium fluorides**
. . . . . fluorspar
. . . metal fluorides
. . . . **calcium fluorides**
. . . . . fluorspar
. . metal halides
. . . metal fluorides
. . . . **calcium fluorides**
. . . . . fluorspar

calcium isotopes
UF *calcium 45*
GS chemical elements
. calcium
. . **calcium isotopes**
. nuclides
. . isotopes
. . . **calcium isotopes**
metals
. calcium
. . **calcium isotopes**

calcium metabolism
GS metabolism
. **calcium metabolism**
RT bed rest
calmodulin
osteoporosis
parathyroid gland
thyroid gland

calcium oxides
UF *lime*
GS calcium compounds
. **calcium oxides**
. . akermanite
chalcogenides
. oxides
. . metal oxides
. . . alkaline earth oxides
. . . . **calcium oxides**
. . . . . akermanite
RT BSCCO superconductors

calcium phosphates
UF *apatites*
GS calcium compounds
. **calcium phosphates**
phosphorus compounds
. phosphates
. . **calcium phosphates**
RT bone mineral content

calcium silicates
GS calcium compounds
. **calcium silicates**
. . gehlenite
silicon compounds
. silicates
. . **calcium silicates**
. . . gehlenite
RT amphiboles
minerals

calcium sulfides
GS calcium compounds
. **calcium sulfides**
chalcogenides
. sulfides
. . inorganic sulfides
. . . **calcium sulfides**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **calcium sulfides**

calcium tungstates
GS calcium compounds
. **calcium tungstates**
tungsten compounds
. tungstates
. . **calcium tungstates**

calcium vanadates
GS calcium compounds
. **calcium vanadates**
vanadium compounds
. vanadates
. . **calcium vanadates**

calculation
USE **computation**

calculators
RT arithmetic
computation
computers

calculi
UF *renal calculi*
GS deposits
. **calculi**
. . dental calculi
RT lithiasis
urolithiasis

calculus
SN (LIMITED TO MATHEMATICS)
GS analysis (mathematics)
. **calculus**
. . continuity (mathematics)
. . differential calculus
. . Fourier–Bessel transformations
. . Graeff calculus
. . integral calculus
. . limits (mathematics)
. . series (mathematics)
. . . asymptotic series
. . . Campbell–Hausdorff series
. . . cosine series
. . . Fourier series
. . . Pade approximation
. . . power series
. . . . Taylor series
. . . . . MacLaurin series
. . . progressions
. . . Prony series
. . . sine series
. . vector analysis
. . . collinearity
. . . coplanarity
. . . curl (vectors)
. . . . vorticity
RT analytic geometry
asymptotes
differential equations
functions (mathematics)
∞ mathematics
monotone functions
operational calculus
real variables

calculus of variations
UF *variation method*
GS analysis (mathematics)
. real variables
. . **calculus of variations**
RT Biot method
Castigliano variational theorem
differential equations
Euler–Lagrange equation
integral equations
invariant imbeddings
Jacobi matrix method
maxima
operational calculus
pontryagin principle
steepest descent method
variational principles

calderas
DEF Large, basin-shaped volcanic depressions, more or less circular in form, the diameter of which is many times greater than that of the included vent or vents.
GS landforms
. **calderas**
RT cones (volcanoes)
craters
lava
Mars volcanoes
volcanoes
volcanology

calendars
DEF Orderly arrangements of days, weeks, months, etc. to suit a particular need such as civil life.
GS **calendars**
. crop calendars
RT month
scheduling
time

calibrating
UF *graduation*
GS **calibrating**
. wind tunnel calibration
RT accuracy
instrument compensation
instrument errors
measuring instruments
∞ scaling
Solar Cell Calibration Facility
standardization
standards
temperature scales

California
GS nations
. United States
. . **California**
RT Cascade Range (CA–OR–WA)
Coachella Valley (CA)
coastal ranges (CA)
Death Valley (CA)
Feather River Basin (CA)
Great Basin (US)
Imperial Valley (CA)
Lake Tahoe (CA–NV)

Mojave Desert (CA)
Monterey Bay (CA)
Palo Verde Valley (CA)
Peninsular Ranges (CA)
Sacramento Valley (CA)
Salton Sea (CA)
San Andreas Fault
San Francisco (CA)
San Francisco Bay (CA)
San Joaquin Valley (CA)
San Pablo Bay (CA)
Sierra Nevada Mountains (CA)
Southern California

californium
GS chemical elements
. actinide series
. . transuranium elements
. . . **californium**
. . . . californium isotopes
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . **californium**
. . . . . californium isotopes
metals
. actinide series
. . transuranium elements
. . . **californium**
. . . . californium isotopes
RT californium compounds

californium 252
USE **californium isotopes**

californium compounds
GS actinide series compounds
. **californium compounds**
RT californium

californium isotopes
UF *californium 252*
GS chemical elements
. actinide series
. . transuranium elements
. . . californium
. . . . **californium isotopes**
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . californium
. . . . . **californium isotopes**
metals
. actinide series
. . transuranium elements
. . . californium
. . . . **californium isotopes**

Callisto
DEF A satellite of Jupiter orbiting at a mean distance of 1,884,000 kilometers. Also called Jupiter IV.
GS celestial bodies
. natural satellites
. . icy satellites
. . . **Callisto**
. . Jupiter satellites
. . . Galilean satellites
. . . . **Callisto**
RT Charon
Ganymede
Io
Jupiter (planet)

calmodulin
GS biopolymers
. proteins
. . **calmodulin**
organic compounds
. proteins
. . **calmodulin**
RT calcium
calcium metabolism
cytoplasm
gravitropism
regulatory mechanisms (biology)

caloric requirements
GS nutritional requirements
. **caloric requirements**
RT diets
∞ food
metabolism
mineral metabolism
∞ nutrients
nutrition

caloric stimuli
RT ∞ stimuli

calorimeters
DEF Instruments designed to measure heat evolved or absorbed. Used for microcalorimeters.
UF *microcalorimeters*
GS measuring instruments
. **calorimeters**
. . bomb calorimeters
. . drop calorimeters
. . flame calorimeters
RT heat measurement
high temperature tests
scintillating fibers
temperature measuring instruments

calorimetry
USE **heat measurement**

calutrons
USE **cyclotrons**

calves
GS animals
. vertebrates
. . mammals
. . . cattle
. . . . **calves**
RT livestock

Calypso
(added January 1996)
DEF A natural satellite of Saturn orbiting at a mean distance of 294,660 kilometers.
GS celestial bodies
. natural satellites
. . Saturn satellites
. . . **Calypso**
RT Saturn (planet)

CAM (manufacturing)
USE **computer aided manufacturing**

camber
GS **camber**
. conical camber
. wing camber
RT airfoils
bending
∞ bows
cambered wings
curvature
curved beams
deflection
deformation
distortion
flexing
fuselages
lift
warpage

cambered wings
GS airfoils
. wings
. . **cambered wings**
RT camber
fixed wings
twisted wings
uncambered wings
wing camber

Cambodia
UF *Kampuchea*
GS nations
. **Cambodia**
RT Asia

Cambrian Period
(added June 1989)
GS Paleozoic Era
. **Cambrian Period**
RT geochronology
paleontology
Precambrian period

Camel aircraft
USE **TU-104 aircraft**

camera shutters
RT cameras
irises (mechanical apertures)
Kerr cells
panoramic cameras
∞ shutters
streak cameras

camera tubes
GS electron tubes
. **camera tubes**
. . image dissector tubes
. . orthicons
. . . image orthicons
. . vidicons
. . . return beam vidicons
. . . . thermicons
RT cameras
dynodes
image converters
image transducers
monoscopes
planotrons
television cameras
video equipment

cameras
GS optical equipment
. **cameras**
. . Baker-Nunn camera
. . ballistic cameras
. . CCD cameras
. . Delft camera
. . diffraction limited cameras
. . faint object camera
. . high speed cameras
. . . framing cameras
. . I2S cameras
. . Lallemand cameras
. . multispectral band cameras
. . panoramic cameras
. . pinhole cameras
. . Schmidt cameras
. . streak cameras
. . television cameras
photographic equipment
. **cameras**

. . Baker–Nunn camera
. . ballistic cameras
. . CCD cameras
. . Delft camera
. . diffraction limited cameras
. . faint object camera
. . high speed cameras
. . . framing cameras
. . I2S cameras
. . Lallemand cameras
. . multispectral band cameras
. . panoramic cameras
. . pinhole cameras
. . Schmidt cameras
. . streak cameras
. . television cameras
RT camera shutters
camera tubes
cinematography
focusing
lenses
photography
SIM
streak photography
ultraviolet photography
underwater photography
wide angle lenses

Cameroon
GS nations
. **Cameroon**
RT Africa

camouflage
RT air defense
coverings
netting (materials/structures)

Campbell–Hausdorff series
GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . **Campbell–Hausdorff series**
. real variables
. . series (mathematics)
. . . **Campbell–Hausdorff series**

camphor
GS ketones
. **camphor**
terpenes
. **camphor**

cams
GS positioning devices (machinery)
. **cams**
RT actuators
eccentrics
internal combustion engines
linkages
mechanical devices

Canada
GS nations
. **Canada**
. . Alberta
. . British Columbia
. . Manitoba
. . New Brunswick
. . Newfoundland
. . Northwest Territories
. . Nova Scotia
. . Ontario
. . Prince Edward Island
. . Quebec
. . Saskatchewan
. . Yukon Territory
RT Anik 1
Anik 2
Anik 3
Beaufort Sea (North America)
Canadian space program
Canadian spacecraft
Communications Technology Satellite
Great Lakes (North America)
Great Plains Corridor (North America)
Hudson Bay (Canada)
International Field Year for Great Lakes
International Hydrological Decade
Labrador
Lake Champlain Basin (NY–VT)
North America
Pacific Northwest (US)
Rocky Mountains (North America)
St Lawrence Valley (North America)
Williston Basin (North America)

Canadair aircraft
UF *Canadair CF–104 aircraft*
CF–104 aircraft
GS **Canadair aircraft**
. CL–41 aircraft
. CL–44 aircraft
. CL–84 aircraft
. CL–600 challenger aircraft
RT ∞ aircraft
General Dynamics aircraft

Canadair CF–104 aircraft
USE **Canadair aircraft**
F–104 aircraft

Canadair CL–41 aircraft
USE **CL–41 aircraft**

Canadair CL–44 aircraft
USE **CL–44 aircraft**

Canadair CL–84 aircraft
USE **CL–84 aircraft**

Canadian Shield
RT geology
meteorite craters
Precambrian period

Canadian space program
DEF Space research, programs, and activities undertaken by Canada.
GS programs
. space programs
. . **Canadian space program**
. . . Alouette project
RT aerospace technology transfer
Anik 1
Anik 2
Anik 3
Anik satellites
Canada
Canadian spacecraft
Communications Technology Satellite
NASA programs
Radarsat
scientific satellites
synchronous satellites
technology assessment
technology utilization

Canadian spacecraft
DEF Spacecraft of the Canadian Government. The following satellites have been developed: Alouette satellites, ISIS satellites, Anik satellites, and Hermes satellite. RADARSAT and MSAT are in the process of being developed.
GS **Canadian spacecraft**
. Alouette satellites
. . Alouette 1 satellite
. . Alouette 2 satellite
. . Alouette B satellite
. Anik satellites
. . Anik 1
. . Anik 2
. . Anik 3
. Radarsat
RT Canada
Canadian space program
∞ spacecraft

canals
GS landforms
. **canals**
waterways
. **canals**
RT ditches
flood control
fluid flow
gates (openings)
Great Lakes (North America)
irrigation
Mars surface
materials handling
Panama
seepage
straits
troughs
water flow

canard configurations
DEF Pertaining to an aerodynamic vehicle in which horizontal surfaces used for trim and control are forward of the main lifting surface; the horizontal trim and control surfaces in such an arrangement.
GS aerodynamic configurations
. **canard configurations**
RT aircraft structures
∞ configurations
control surfaces
JAS–39 aircraft
Saab 37 aircraft
tandem wing aircraft
X–31 aircraft

Canary Islands
GS landforms
. islands
. . **Canary Islands**
nations
. Spain
. . **Canary Islands**

Canberra aircraft
GS BAC aircraft
. **Canberra aircraft**
jet aircraft
. **Canberra aircraft**
monoplanes
. **Canberra aircraft**
RT ∞ aircraft
B–57 aircraft

Canberra bomber
USE **B–57 aircraft**

cancellation
RT contracts
elimination
removal
stopping

cancellation circuits
GS circuits
. **cancellation circuits**
RT display devices
moving target indicators

pulse Doppler radar
radar

cancer
UF *carcinoma*
sarcoma
GS diseases
. tumors
. . neoplasms
. . . **cancer**
. . . . leukemias
RT bone marrow
carcinogens
cells (biology)
radiation therapy
tissues (biology)
ulcers

canisters
USE **cans**

canning
GS food processing
. **canning**
RT encapsulating
∞ food

Cannonball 2 satellite
GS artificial satellites
. scientific satellites
. . **Cannonball 2 satellite**

cannons
USE **guns (ordnance)**

cannulae
RT∞ tubes

canonical forms
GS algebra
. vector spaces
. . matrices (mathematics)
. . . **canonical forms**
RT fibers (mathematics)

canopies
RT aircraft structures
airframes
cockpits
fairings
windshields

canopies (vegetation)
DEF The topmost layers of leaves and branches of forest trees or other plants.
GS vegetation
. **canopies (vegetation)**
RT foliage
forests
grasses
leaf area index
leaves
plants (botany)
rain forests
sod
trees (plants)
vegetative index

cans
UF *canisters*
RT∞ containers
drums (containers)

cant
USE **slopes**

cantilever beams
GS cantilever members
. **cantilever beams**
structural members
. beams (supports)
. . **cantilever beams**
RT box beams
I beams

cantilever members
GS **cantilever members**
. cantilever beams
. cantilever plates
RT levers

cantilever plates
GS cantilever members
. **cantilever plates**
structural members
. plates (structural members)
. . **cantilever plates**
RT anisotropic plates

cantilever wings
USE **wings**

canyons
UF *coulees*
gorges
GS landforms
. **canyons**
. . Grand Canyon (AZ)
RT arroyos
cliffs
fans (landforms)
ravines
rivers
valleys
water erosion

cap clouds
UF *orographic clouds*
GS clouds (meteorology)
. **cap clouds**
RT atmospheric moisture
climatology
cloud cover
meteorology
nephanalysis
precipitation (meteorology)
weather

capacitance
DEF That property of a system of conductors and dielectrics which permits the storage of electrically separated charges when potential differences exist between the conductors. It is the ratio of a quantity, Q, of electricity to a potential difference, V. A capacitance value is always positive. The units are farads when the charge is expressed in coulombs and the potential in volts: C = Q/V. Capacitance is symbolized as C.
GS electrical properties
. **capacitance**
RT capacitance–voltage characteristics
capacitors
∞ capacity
dielectric properties
electric charge
electrical impedance
electrostatic charge
inductance
open circuit voltage
RC circuits
reactance
RLC circuits

capacitance switches
GS switches
. **capacitance switches**
RT capacitors
dielectrics
RLC circuits
switching circuits

capacitance–voltage characteristics
DEF The characteristics of a metal semiconductor contact or a semiconductor junction that manifests a measured capacitance as a function of a dc bias voltage with small, superimposed ac voltage applied to that junction or contact.
GS electrical properties
. **capacitance–voltage characteristics**
RT capacitance
∞ characteristics
electric potential
metal oxide semiconductors
volt–ampere characteristics

capacitive fuel gages
GS measuring instruments
. fuel gages
. . **capacitive fuel gages**
RT dielectrics

capacitors
RT amplifiers
ballasts (impedances)
capacitance
capacitance switches
circuit protection
circuits
∞ condensers
dielectrics
electrets
electric bridges
electric energy storage
electric filters
electric reactors
energy storage
Gerdien condensers
parallel plates
solid state devices

∞ capacity
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT capacitance
channel capacity
output
production engineering
risk
volume

Cape Hatteras (NC)
GS landforms
. capes (landforms)
. . **Cape Hatteras (NC)**
RT Atlantic Ocean
North Carolina

Cape Kennedy launch complex
GS launching bases
. **Cape Kennedy launch complex**
RT ground support equipment

Cape Verde
GS nations
. **Cape Verde**
RT Africa
Atlantic Ocean
islands

capes (landforms)
GS landforms

. capes (landforms)
. . Cape Hatteras (NC)
RT land

∞ capillaries
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT capillaries (anatomy)
capillary tubes

capillaries (anatomy)
GS anatomy
. circulatory system
. . cardiovascular system
. . . blood vessels
. . . . capillaries (anatomy)
. . . . . glomerulus
RT blood
∞ capillaries

capillary circulation
USE capillary flow

capillary flow
UF *capillary circulation*
GS fluid flow
. capillary flow
RT blood flow
laminar flow
liquid bridges
surface tension driven convection

capillary tubes
RT ∞ capillaries
∞ tubes

capillary waves
GS elastic waves
. capillary waves
. . gravity waves
. . . baroclinic waves
. . ripples
surface waves
. capillary waves
. . gravity waves
. . . baroclinic waves
. . ripples
RT interfacial tension
two dimensional flow
water waves

∞ capes
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT caps (explosives)
coverings
nose cones
polar caps
seals (stoppers)
spherical caps

caps (explosives)
GS explosive devices
. initiators (explosives)
. . caps (explosives)
igniters
. initiators (explosives)
. . caps (explosives)
RT ∞ caps
detonators
exploding wires
fuses (ordnance)
primers (explosives)

∞ capsules
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ buckets
∞ containers
fuel capsules
shells (structural forms)
space capsules
tablets
test chambers
∞ test equipment
test vehicles
∞ vessels

capsules (spacecraft)
USE space capsules

captive tests
DEF Holddown tests of a propulsive subsystem, rocket engine or motor as distinguished from a flight test.
GS captive tests
. static tests
. . static firing
RT engine tests
ground tests
missile tests
prefiring tests
prelaunch tests
∞ tests

capture cross sections
USE absorption cross sections

capture effect
DEF An effect in frequency-modulation (FM) reception where the stronger signal of two stations on the same frequency completely suppresses the weaker signal.
RT absorptance
∞ absorption
∞ effects
electron capture
frequency modulation
frequency synchronization
nuclear capture
recombination reactions
trajectory analysis

captured air bubble vehicles
GS surface vehicles
. captured air bubble vehicles
water vehicles
. captured air bubble vehicles
RT hydrofoil craft
surface effect ships
SWATH (ship)
∞ vehicles

Caravelle aircraft
USE SE-210 aircraft

Carbamates (tradename)
GS esters
. Carbamates (tradename)
. . urethanes
poisons
. pesticides
. . insecticides
. . . Carbamates (tradename)
. . . . urethanes

carbamides
GS nitrogen compounds
. amides
. . carbamides

carbazoles
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azoles
. . . . pyrroles
. . . . . carbazoles

carbenes
DEF An organic radical containing divalent carbon.
RT free radicals

carbides
DEF Compounds of carbon with one or more metallic elements.
GS carbon compounds
. carbides
. . aluminum carbides
. . boron carbides
. . cementite
. . chromium carbides
. . hafnium carbides
. . molybdenum carbides
. . niobium carbides
. . silicon carbides
. . tantalum carbides
. . titanium carbides
. . tungsten carbides
. . uranium carbides
. . vanadium carbides
. . zirconium carbides
RT ceramic nuclear fuels
refractory materials

carbohydrate metabolism
GS metabolism
. carbohydrate metabolism
. . hyperglycemia
. . hypoglycemia
RT cortisone
diabetes mellitus
hydrogen metabolism

carbohydrates
UF *saccharides*
GS organic compounds
. carbohydrates
. . citric acid
. . glucosides
. . . nucleosides
. . . . adenines
. . . . guanosines
. . polysaccharides
. . . cellulose
. . . . Fortisan (trademark)
. . . chitin
. . . dextrans
. . . glycogens
. . . starches
. . sugars
. . . dextrans
. . . inositols
. . . lactose
. . . mannitol
. . . monosaccharides
. . . . hexoses
. . . . . galactose
. . . . . glucose
. . . . pentose
. . . . . ribose
. . . . . xylose
. . . sucrose
RT alcohols
ethyl alcohol
∞ food

glycerols
∞ nutrients
optical activity
∞ oxygen compounds
photosynthesis
stereochemistry
synthetic food

carbon
GS chemical elements
. **carbon**
. . carbon isotopes
. . . carbon 12
. . . carbon 13
. . . carbon 14
RT activated carbon
bitumens
buckminsterfullerene
charcoal
coke
decarburization
diamonds
fullerenes
glassy carbon
graphite
soot

carbon 12
GS chemical elements
. carbon
. . carbon isotopes
. . . **carbon 12**
. nuclides
. . isotopes
. . . carbon isotopes
. . . . **carbon 12**

carbon 13
GS chemical elements
. carbon
. . carbon isotopes
. . . **carbon 13**
. nuclides
. . isotopes
. . . carbon isotopes
. . . . **carbon 13**

carbon 14
GS chemical elements
. carbon
. . carbon isotopes
. . . **carbon 14**
. nuclides
. . isotopes
. . . carbon isotopes
. . . . **carbon 14**
. . . radioactive isotopes
. . . . **carbon 14**

carbon arcs
GS electric current
. electric discharges
. . electric arcs
. . . **carbon arcs**
RT arc lamps
image furnaces

carbon compounds
SN (RESTRICTED TO INORGANIC COMPOUNDS)
GS **carbon compounds**
. carbides
. . aluminum carbides
. . boron carbides
. . cementite
. . chromium carbides
. . hafnium carbides
. . molybdenum carbides
. . niobium carbides
. . silicon carbides
. . tantalum carbides
. . titanium carbides
. . tungsten carbides
. . uranium carbides
. . vanadium carbides
. . zirconium carbides
. carbon dioxide
. carbon disulfide
. carbon monoxide
. carbon suboxides
. carbon tetrachloride
. carbon tetrafluoride
. carbonates
. . bastnasite
. . calcium carbonates
. . . akermanite
. . . aragonite
. . . calcite
. . . chalk
. . dolomite (mineral)
. . polycarbonates
. . . Lexan (trademark)
. . siderites
. . sodium carbonates
. . tetraethyl orthocarbonates
. halocarbons
. . chlorocarbons
. . chlorofluorocarbons
. . fluorocarbons
RT carbonaceous materials
∞ chemical compounds
Group 4A compounds
hydrocarbons
methylidyne
Swan bands

carbon cycle
DEF The path of carbon in living beings in which carbon dioxide is fixed by photosynthesis to form organic nutrients and ultimately restored to the inorganic state by respiration and protoplasmic decay.
GS cycles
. **carbon cycle**
RT animals
∞ biology
biomass
ecology
organisms
plants (botany)
viability

carbon dioxide
GS carbon compounds
. **carbon dioxide**
chalcogenides
. oxides
. . dioxides
. . . **carbon dioxide**
gases
. **carbon dioxide**
RT Chlorella
metabolic wastes
synthane

carbon dioxide concentration
GS composition (property)
. chemical composition
. . **carbon dioxide concentration**
. concentration (composition)
. . **carbon dioxide concentration**
. gas composition
. . **carbon dioxide concentration**
RT air purification
atmospheric composition
climate change
decontamination
rebreathing
spacecraft cabin atmospheres

carbon dioxide lasers
GS stimulated emission devices
. lasers
. . gas lasers
. . . **carbon dioxide lasers**
RT chemical lasers
continuous wave lasers
gas masers
infrared lasers
Mach–Zehnder interferometers
molecular oscillations
organic lasers
polar gases
pulsed lasers
Q switched lasers
stimulated emission
TEA lasers
waveguide lasers

carbon dioxide removal
GS removal
. **carbon dioxide removal**
RT air purification
decontamination
rebreathing
smoke abatement

carbon dioxide tension
GS **carbon dioxide tension**
. hypercapnia
. hypocapnia

carbon disulfide
GS carbon compounds
. **carbon disulfide**
chalcogenides
. sulfides
. . disulfides
. . . **carbon disulfide**
sulfur compounds
. sulfides
. . disulfides
. . . **carbon disulfide**

carbon fiber reinforced plastics
UF *CFRP*
GS composite materials
. fiber composites
. . **carbon fiber reinforced plastics**
. . . carbon–phenolic composites
. polymer matrix composites
. . reinforced plastics
. . . **carbon fiber reinforced plastics**
. . . . carbon–phenolic composites
plastics
. reinforced plastics
. . **carbon fiber reinforced plastics**
. . . carbon–phenolic composites
RT braided composites
fibers
graphite–epoxy composites
lay-up
PEEK
reinforcing fibers
superhybrid materials
woven composites

carbon fibers
GS fibers
. reinforcing fibers
. . **carbon fibers**
RT boron fibers
carbon–phenolic composites

chemical vapor infiltration
composite materials
fiber composites
fiber pullout
∞ filaments
polyacrylonitrile

carbon isotopes
GS chemical elements
. carbon
. . carbon isotopes
. . . carbon 12
. . . carbon 13
. . . carbon 14
. nuclides
. . isotopes
. . . carbon isotopes
. . . . carbon 12
. . . . carbon 13
. . . . carbon 14

carbon lasers
GS stimulated emission devices
. lasers
. . carbon lasers
RT chemical lasers
gas lasers
infrared lasers
liquid lasers
organic lasers
stimulated emission

carbon monoxide
GS carbon compounds
. carbon monoxide
chalcogenides
. oxides
. . carbon monoxide
gases
. carbon monoxide
RT Hopcalite (trademark)
smog
synthane

carbon monoxide lasers
GS stimulated emission devices
. lasers
. . gas lasers
. . . carbon monoxide lasers
RT chemical lasers
continuous wave lasers
infrared lasers
molecular oscillations
stimulated emission
TEA lasers

carbon monoxide poisoning
GS diseases
. toxic diseases
. . carbon monoxide poisoning
toxicity
. carbon monoxide poisoning
RT carboxyhemoglobin
lethality
occupational diseases
pathological effects
∞ poisoning

carbon stars
UF *C stars*
GS celestial bodies
. stars
. . giant stars
. . . red giant stars
. . . . carbon stars
. . late stars
. . . cool stars
. . . . carbon stars
RT asymptotic giant branch stars
irregular variable stars
Mira variables
R Coronae Borealis stars
stellar composition
subgiant stars
Wolf–Rayet stars

carbon steels
GS alloys
. iron alloys
. . steels
. . . carbon steels
. . . . low carbon steels
RT high strength steels

carbon suboxides
DEF Colorless lacrimatory gases having unpleasant odors and boiling points of approximately –7 degrees C.
GS carbon compounds
. carbon suboxides
chalcogenides
. oxides
. . carbon suboxides
gases
. carbon suboxides
RT ∞ oxygen compounds

carbon tetrachloride
UF *tetrachloromethane*
GS carbon compounds
. carbon tetrachloride
halogen compounds
. chlorine compounds
. . chlorides
. . . carbon tetrachloride
. halides
. . chlorides
. . . carbon tetrachloride

carbon tetrachloride poisoning
GS diseases
. toxic diseases
. . carbon tetrachloride poisoning
toxicity
. carbon tetrachloride poisoning
RT industrial safety
∞ poisoning
toxicity and safety hazard
toxicology

carbon tetrafluoride
GS carbon compounds
. carbon tetrafluoride
halogen compounds
. fluorine compounds
. . fluoro compounds
. . . fluorine organic compounds
. . . . fluorohydrocarbons
. . . . . carbon tetrafluoride
organic compounds
. fluorine organic compounds
. . fluorohydrocarbons
. . . carbon tetrafluoride
. hydrocarbons
. . fluorohydrocarbons
. . . carbon tetrafluoride

carbon–carbon composites
GS composite materials
. carbon–carbon composites
RT fiber composites
fracture strength
reinforcing fibers
thermal protection
thermal resistance

carbon–phenolic composites
(added January 1993)
GS composite materials
. fiber composites
. . carbon fiber reinforced plastics
. . . carbon–phenolic composites
. polymer matrix composites
. . reinforced plastics
. . . carbon fiber reinforced plastics
. . . . carbon–phenolic composites
. resin matrix composites
. . carbon–phenolic composites
plastics
. reinforced plastics
. . carbon fiber reinforced plastics
. . . carbon–phenolic composites
RT ablative materials
carbon fibers
phenolic resins
rocket nozzles

carbonaceous chondrites
DEF A group name for friable, dull-black, chondritic stonay meteorites, characterized by the presence of hydrated clay type silicate minerals, by considerable amounts and a great variety of organic compounds believed to be of extraterrestrial origin; by a near or total lack of free nickel–iron; and by an abnormally high content of inert gases.
GS celestial bodies
. meteorites
. . stony meteorites
. . . carbonaceous meteorites
. . . . carbonaceous chondrites
. . . . . Alais meteorite
. . . . . Allende meteorite
. . . . . Cold Bokkeveld meteorite
. . . . . Ivuna meteorite
. . . . . Murchison meteorite
. . . . . Murray meteorite
. . . . . Orgueil meteorite
. . . . . Tonk meteorite
. . . chondrites
. . . . carbonaceous chondrites
. . . . . Alais meteorite
. . . . . Allende meteorite
. . . . . Cold Bokkeveld meteorite
. . . . . Ivuna meteorite
. . . . . Murchison meteorite
. . . . . Murray meteorite
. . . . . Orgueil meteorite
. . . . . Tonk meteorite

carbonaceous materials
DEF Substance composed of or containing carbon or carbon compounds.
GS carbonaceous materials
. graphite
. . pyrolytic graphite
. peat
RT carbon compounds
coal
crude oil
fossil fuels
lignite
∞ materials
organic materials
solvent refined coal

carbonaceous meteorites
GS celestial bodies
. meteorites
. . stony meteorites
. . . carbonaceous meteorites
. . . . carbonaceous chondrites
. . . . . Alais meteorite

. . . . . Allende meteorite
. . . . . Coid Bokkeveld meteorite
. . . . . Ivuna meteorite
. . . . . Murchison meteorite
. . . . . Murray meteorite
. . . . . Orgueil meteorite
. . . . . Tonk meteorite
. . . . ureilites
RT exobiology
meteoritic composition

carbonaceous rocks
GS rocks
. sedimentary rocks
. . carbonaceous rocks
. . . coal
. . . . anthracite
. . . . lignite
. . . . solvent refined coal
RT carbonates
regolith
shatter cones
soils

carbonates
UF *bicarbonates*
GS carbon compounds
. carbonates
. . bastnasite
. . calcium carbonates
. . . akermanite
. . . aragonite
. . . calcite
. . . chalk
. . dolomite (mineral)
. . polycarbonates
. . . Lexan (trademark)
. . siderites
. . sodium carbonates
. . tetraethyl orthocarbonates
RT alkalies
carbonaceous rocks
carbonic acid
molten carbonate fuel cells
∞ oxygen compounds

carbonic acid
GS acids
. carbonic acid
RT carbonates

carbonic anhydrase
GS biopolymers
. proteins
. . enzymes
. . . carbonic anhydrase
organic compounds
. proteins
. . enzymes
. . . carbonic anhydrase
RT acetazolamide

carbonization
GS chemical reactions
. carbonization
RT charring
decarbonation

carbonyl compounds
RT ∞ chemical compounds
oxetane polymers

carborane
GS boron compounds
. boron hydrides
. . boranes
. . . carborane
hydrogen compounds
. hydrides
. . boron hydrides
. . . boranes
. . . . carborane

Carborundum (trademark)
RT abrasives
refractory materials
silicon carbides

carboxyhemoglobin
GS biopolymers
. proteins
. . hemoglobin
. . . carboxyhemoglobin
organic compounds
. proteins
. . hemoglobin
. . . carboxyhemoglobin
organometallic compounds
. hemoglobin
. . carboxyhemoglobin
RT blood circulation
carbon monoxide poisoning
erythrocytes

carboxyhemoglobin test
GS physiological tests
. carboxyhemoglobin test
RT blood
hematology

carboxyl group
RT carboxylic acids

carboxylates
GS esters
. carboxylates
RT carboxylic acids

carboxylation
GS chemical reactions
. carboxylation
RT decarboxylation

carboxylic acids
GS acids
. carboxylic acids
. . acrylic acid
. . alanine
. . . phenylalanine
. . aspartic acid
. . citric acid
. . dicarboxylic acids
. . fatty acids
. . . acetic acid
. . . . ethylenediaminetetraacetic acids
. . . . iodoacetic acid
. . . acetylsalicylic acid
. . . benzilic acid
. . . benzoic acid
. . . lipoic acid
. . . oleic acid
. . . palmitic acid
. . . propionic acid
. . . sebacic acid
. . . valeric acid
. . folic acid
. . formhydroxamic acid
. . formic acid
. . Hexogenes (trademark)
. . lactic acid
. . lysine
. . nicotinic acid
. . oxalic acid
. . oxamic acids
. . tryptophan
organic compounds
. carboxylic acids
. . acrylic acid
. . alanine
. . . phenylalanine
. . aspartic acid
. . citric acid
. . dicarboxylic acids
. . fatty acids
. . . acetic acid
. . . . ethylenediaminetetraacetic acids
. . . . iodoacetic acid
. . . acetylsalicylic acid
. . . benzilic acid
. . . benzoic acid
. . . lipoic acid
. . . oleic acid
. . . palmitic acid
. . . propionic acid
. . . sebacic acid
. . . valeric acid
. . folic acid
. . formhydroxamic acid
. . formic acid
. . Hexogenes (trademark)
. . lactic acid
. . lysine
. . nicotinic acid
. . oxalic acid
. . oxamic acids
. . tryptophan
RT carboxyl group
carboxylates
terephthalate

carburetors
UF *injection carburetors*
RT chokes (fuel systems)
contactors
engine parts
engines
fuel injection
fuel systems
injectors
internal combustion engines
∞ jet nozzles
mixers
premixed flames
throats

carburizing
DEF Introducing carbon into a solid ferrous alloy by holding above Ac1 in contact with a suitable carbonaceous material. The carburized alloy is usually quench hardened.
GS hardening (materials)
. carburizing
RT decarburization

carcinogens
DEF Agents producing or inciting cancerous growth.
RT cancer
hazardous materials
neoplasms

carcinoma
USE cancer

carcinotrons
GS amplifiers
. carcinotrons
electron tubes
. vacuum tubes
. . microwave tubes
. . . traveling wave tubes
. . . . carcinotrons
microwave equipment
. microwave tubes

. . traveling wave tubes
. . . carcinotrons
RT heitrons

cardiac auricles
GS anatomy
. circulatory system
. . cardiovascular system
. . . heart
. . . . cardiac auricles
RT His bundle

cardiac output
(added March 1991)
GS output
. cardiac output
. . heart minute volume
. . stroke volume
RT blood volume
cardiovascular system
heart function
heart rate
physiological tests

cardiac ventricles
GS anatomy
. circulatory system
. . cardiovascular system
. . . heart
. . . . cardiac ventricles
RT diastolic pressure
echocardiography
His bundle
systole

cardiograms
RT biomedical data
cardiography
heart

cardiography
GS biosngineering
. biometrics
. . cardiography
. . . ballistocardiography
. . . electrocardiography
. . . magnetocardiography
. . . phonocardiography
. . . . echocardiography
. . . seismocardiography
. . . vectorcardiography
RT cardiograms
cardiovascular system
heart
heart diseases
heart function
medical equipment
physiological tests

cardiology
GS medical science
. cardiology
RT angiography
artificial cardiac pacemaker
heart
heart diseases
heart rate
radiocardiography

cardiotachometers
GS medical equipment
. cardiotachometers
RT heart

cardiovascular system
DEF The system of an animal pertaining to the heart and blood vessels. Used for vascular system.
UF *vascular system*
GS anatomy
. circulatory system
. . cardiovascular system
. . . blood vessels
. . . . arteries
. . . . . aorta
. . . . capillaries (anatomy)
. . . . . glomerulus
. . . . veins
. . . heart
. . . . cardiac auricles
. . . . cardiac ventricles
. . . . epicardium
. . . . myocardium
RT angiography
blood
blood volume
cardiac output
cardiography
carotid sinus body
carotid sinus reflex
cerebral vascular accidents
diastole
fat embolisms
heart diseases
hematopoiesis
hematopoietic system
hemodynamics
hemorrhages
lower body negative pressure
stroke volume
∞ systems
systole

cards
GS cards
. punched cards
RT computer storage devices
data storage

caret wings
GS airfoils
. wings
. . caret wings
planforms
. caret wings
RT arrow wings
delta wings
waveriders

CARETS (test site)
USE Central Atlantic Regional Ecol Test Site

cargo
UF *freight*
GS cargo
. air cargo
. . air mail
. baggage
RT air drop operations
airdrops
delivery
freight costs
harbors
hauling
materials handling
railroad humping tests
rapid transit systems
transportation
transportation energy
trucks

cargo aircraft
GS transport aircraft
. cargo aircraft
. . Breguet 941 aircraft
. . C-1A aircraft
. . C-2 aircraft
. . C-5 aircraft
. . C-9 aircraft
. . C-15 aircraft
. . C-17 aircraft
. . C-33 aircraft
. . C-35 aircraft
. . C-46 aircraft
. . C-47 aircraft
. . C-54 aircraft
. . C-118 aircraft
. . C-119 aircraft
. . C-121 aircraft
. . C-123 aircraft
. . C-124 aircraft
. . C-130 aircraft
. . C-131 aircraft
. . C-133 aircraft
. . C-135 aircraft
. . C-140 aircraft
. . C-141 aircraft
. . C-160 aircraft
. . CH-21 helicopter
. . CL-44 aircraft
. . DC 3 aircraft
. . DC 7 aircraft
. . P-160 aircraft
. . P-166 aircraft
. . spanloader aircraft
. . YC-14 aircraft
RT air cargo
∞ aircraft
Boeing 727 aircraft
Boeing 737 aircraft
Boeing 767 aircraft
commercial aircraft
heavy lift helicopters
jet aircraft
materials handling
Mercure aircraft
MH-262 aircraft
∞ military aircraft
monoplanes
passenger aircraft
SC-7 aircraft
supersonic transports
T-39 aircraft
TU-154 aircraft
utility aircraft
VC-10 aircraft

cargo ships
UF *LOTS cargo ships*
GS surface vehicles
. cargo ships
. . Savannah nuclear ship
. . tanker ships
water vehicles
. ships
. . cargo ships
. . . Savannah nuclear ship
. . . tanker ships
RT artificial harbors
deepwater terminals
nuclear powered ships
offshore docking
offshore platforms
shipyards
tanker terminals
wharves

cargo spacecraft
RT Automated Transfer Vehicle
ferry spacecraft
∞ spacecraft

Cargomaster aircraft
USE **C-133 aircraft**

Caribbean region
DEF The region that consists of all or parts of the islands of the Caribbean Sea, the Bahamas, the British dependent territories, the Virgin Islands, and the mainland areas of the three Guianas and Belize.
RT Antigua and Barbuda
Bahamas
Barbados
Belize
Cuba
developing nations
Dominican Republic
French Guiana
Grenada
Guyana
Haiti
Jamaica
Martinique
Surinam
Trinidad and Tobago
Virgin Islands
West Indies

Caribbean Sea
GS seas
. **Caribbean Sea**
RT Belize
Cuba
Dominican Republic
Gulf of Mexico
Gulf Stream
Haiti
Panama Canal Zone
Virgin Islands

Caribou aircraft
USE **DHC 4 aircraft**

caribous
GS animals
. vertebrates
. . mammals
. . . deer
. . . . **caribous**

Carme
(added January 1996)
DEF A natural satellite of Jupiter orbiting at a mean distance of 22,600,000 kilometers.
GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . **Carme**
RT Jupiter (planet)

carnitine
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **carnitine**
vitamins
. **carnitine**

Carnot cycle
DEF An idealized reversible thermodynamic cycle. The Carnot cycle consists of four stages: (a) an isothermal expansion of the gas at temperature T1; (b) an adiabatic expansion to temperature T2; (c) an isothermal compression at temperature T2; (d) an adiabatic compression to the original state of the gas to complete the cycle.
GS cycles
. thermodynamic cycles
. . **Carnot cycle**
RT adiabatic conditions
Rankine cycle
Stirling cycle

carotene
GS organic compounds
. hydrocarbons
. . **carotene**
pigments
. **carotene**
RT retinene
skin (anatomy)

carotid sinus body
RT arteries
blood vessels
cardiovascular system
carotid sinus reflex
chemoreceptors
circulatory system
nerves
sinuses

carotid sinus reflex
GS reflexes
. **carotid sinus reflex**
RT arteries
blood vessels
cardiovascular system
carotid sinus body
circulatory system
heart function
nerves
sinuses

Carpathian Mountains (Europe)
GS landforms
. mountains
. . **Carpathian Mountains (Europe)**
RT Europe

carriages
RT carts
chassis
dollies
frames
landing gear
supports
undercarriages

carrier density (solid state)
DEF The charge carrier concentrations of holes and/or electrons in a semiconductor which determines its electronic characteristics and function.
GS density (number/volume)
. particle density (concentration)
. . electron density (concentration)
. . . **carrier density (solid state)**
RT acceptor materials
carrier lifetime
carrier transport (solid state)
∞ carriers
donor materials
electron–hole drops
semiconductors (materials)
Zener effect

carrier frequencies
GS frequencies
. **carrier frequencies**
RT carrier to noise ratios
frequency division multiplexing
harmonic generations
modulation
multiplexing
radio frequencies
single channel per carrier transmission
sweep frequency
unified S band

carrier injection
GS injection
. **carrier injection**
RT additives
Barritt diodes
bipolar transistors
carrier lifetime
charge carriers
charge transfer
injection locking
ion injection
majority carriers
minority carriers
radiative recombination
semiconductors (materials)
Suhl effect
traveling solvent method

carrier lifetime
GS life (durability)
. **carrier lifetime**
RT carrier density (solid state)
carrier injection
carrier mobility
carrier transport (solid state)
charge carriers
minority carriers
solar cells

carrier mobility
GS electrical properties
. **carrier mobility**
. . electron mobility
. . hole mobility
mobility
. **carrier mobility**
. . electron mobility
. . hole mobility
transport properties
. **carrier mobility**
. . electron mobility
. . hole mobility
RT carrier lifetime
electrical resistivity
electromagnetic properties
excitons
Hall effect
ion implantation
superconductors (materials)

carrier modulation
USE **modulation**

carrier rockets
USE **launch vehicles**

carrier systems
USE **wireless communication**

carrier to noise ratios
DEF RF signal power input to the receiver divided by the noise power input.
RT carrier frequencies
communication satellites
data transmission
downlinking
Earth terminals
frequency modulation
signal to noise ratios
transmission efficiency

uplinking

carrier transport (solid state)
DEF The mobility of conduction electrons or holes in semiconductors.
RT carrier density (solid state)
carrier lifetime
diffusion length
energy conversion efficiency
solar cells

carrier waves
DEF Waves generated at a point in the transmitting system and modulated by the signal. Used for subcarrier waves.
UF *subcarrier waves*
RT modulation
radio spectra

∞ **carriers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aircraft carriers
carrier density (solid state)
charge carriers
Zener effect

Carrington rotation
USE **solar rotation**

Cartan space
RT compressible flow
fluid flow
potential flow
∞ space

Cartesian coordinates
DEF A coordinate system in which the locations of points in space are expressed by reference to three planes, called coordinate planes, no two of which are parallel. Used for rectangular coordinates.
UF *rectangular coordinates*
GS coordinates
. **Cartesian coordinates**
geometry
. Euclidean geometry
. . **Cartesian coordinates**
RT cylindrical coordinates
oblique coordinates

cartilage
GS anatomy
. musculoskeletal system
. . connective tissue
. . . **cartilage**
RT bones
larynx

cartography
USE **mapping**

cartridge actuated devices
USE **actuators**
explosive devices

cartridges
RT cases (containers)
∞ containers
packages
projectiles
propellants

carts
RT carriages
materials handling
undercarriages

cascade control
UF *multiloop systems*
GS automatic control
. feedback control
. . **cascade control**
RT ∞ cascades
∞ control
electronic control
optical control
remote control

cascade flow
GS fluid flow
. **cascade flow**
RT ∞ cascades
outlet flow
turbomachine blades

Cascade Range (CA–OR–WA)
GS land
. **Cascade Range (CA–OR–WA)**
landforms
. mountains
. . **Cascade Range (CA–OR–WA)**
RT California
Oregon
United States
Washington

cascade wind tunnels
GS test facilities
. wind tunnels
. . hypersonic wind tunnels
. . . **cascade wind tunnels**
. . hypervelocity wind tunnels
. . . **cascade wind tunnels**
RT hypersonic flow
shock tunnels

∞ **cascades**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cascade control
cascade flow
circuits
cosmic ray showers
electron photon cascades

cascades (fluid dynamics)
USE **fluid dynamics**

cascode MOSFET
USE **field effect transistors**

case bonded propellants
GS propellants
. solid propellants
. . **case bonded propellants**
RT ammunition
composite propellants
explosives
hybrid propellants
inhibitors
plasticizers
solid rocket propellants

case histories
GS histories
. **case histories**
RT anthropology
biography
clinical medicine
documentation
etiology
phenomenology
records
sociology

cases (containers)
GS **cases (containers)**
. rocket engine cases
RT boxes (containers)
cartridges
∞ containers
missile bodies
packages
∞ shelves

∞ **casing**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT coverings
enclosure
jackets
linings
pipes (tubes)
sheaths

casks
USE **barrels (containers)**

Caspian Sea
GS seas
. **Caspian Sea**
RT coasts

Cassegrain antennas
GS antennas
. **Cassegrain antennas**
RT antenna design
Gregorian antennas
parabolic antennas
reflector antennas
subreflectors
two reflector antennas

Cassegrain optics
RT fiber optics
geometrical optics
mirrors
∞ optics
reflecting telescopes
telescopes

Cassini mission
(added August 1988)
GS space missions
. **Cassini mission**
RT European Space Agency
European space programs
Huygens probe
international cooperation
Mariner Mark 2 Spacecraft
∞ missions
NASA space programs
Saturn (planet)
space exploration
space probes
Titan

Cassiopeia A
GS celestial bodies
. nebulae
. . **Cassiopeia A**
. radio sources (astronomy)
. . **Cassiopeia A**
RT Orion nebula

Cassiopeia constellation
GS constellations
. **Cassiopeia constellation**
RT celestial bodies
celestial sphere
stars

cast alloys
GS alloys

. **cast alloys**
RT castings
mechanical properties
microstructure
rheocasting
squeeze casting

Castigliano variational theorem
GS theorems
. **Castigliano variational theorem**
RT calculus of variations
energy methods
Euler–Lagrange equation
stress analysis
structural analysis

casting
GS forming techniques
. **casting**
. . centrifugal casting
. . investment casting
. . propellant casting
. . rheocasting
. . sand casting
. . slip casting
. . squeeze casting
RT baking
billets
dies
extruding
forging
inclusions
ingots
liquid metals
melting
metal working
∞ metallurgy
microstructure
molding materials
molds
mushy zones
pinholes
polymeric films
pouring
pultrusion
resin transfer molding
shrinkage
solidification

casting solvents
USE **plasticizers**

castings
GS **castings**
. ingots
. propellant casting
RT billets
cast alloys
defects
degassing
flat patterns
inclusions
microstructure
molds
pinholes
pouring
risers
solidification

Castor 2 engine
USE **TX-354 engine**

castor oil
GS oils
. **castor oil**
organic compounds
. lipids
. . **castor oil**
RT fatty acids

casts
RT damage assessment
gauze
plasters
splints

casualties
RT death
disasters
evacuating (transportation)

CAT scanner
USE **computer aided tomography**

catabolism
GS metabolism
. **catabolism**
RT physiology

cataclysmic variables
GS celestial bodies
. stars
. . double stars
. . . binary stars
. . . . **cataclysmic variables**
. . variable stars
. . . **cataclysmic variables**
RT dwarf stars
eclipsing binary stars
flare stars
hot stars
novae
periodic variations
solar oscillations
stellar flares
stellar mass ejection
stellar oscillations
white dwarf stars

catalase
GS biopolymers
. proteins
. . enzymes
. . . **catalase**
organic compounds
. proteins
. . enzymes
. . . **catalase**
RT cells (biology)

∞ **catalogs**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT astronomical catalogs
catalogs (publications)
. hardware utilization lists
indexes (documentation)
lists

catalogs (publications)
GS documents
. **catalogs (publications)**
. . astronomical catalogs
RT ∞ catalogs
categories
documentation
information dissemination
libraries

catalysis
GS **catalysis**
. autocatalysis
RT ∞ acceleration
activation
catalytic activity
cracking (chemical engineering)
Fischer–Tropsch process
reaction kinetics

catalysts
GS **catalysts**
. electrocatalysts
. Hopcalite (trademark)
. Ziegler catalyst
RT accelerating agents
. additives
admixtures
coal derived gases
coal derived liquids
enzymes
Grignard reactions
high energy fuels
inhibitors
∞ initiators
platinum black
propellant additives
reagents
retardants

catalytic activity
RT activity (biology)
autocatalysis
catalysis
cracking (chemical engineering)
Fischer–Tropsch process

catapults
DEF A power-actuated machine or device for hurling forth something, as an airplane or missile, at a high initial speed; also a device usually explosive, for ejecting a person from an aircraft.
GS launchers
. **catapults**
. . rocket catapults
RT aircraft launching devices
missile launchers
sea launching

cataracts
GS diseases
. eye diseases
. . **cataracts**
RT lenses
occupational diseases

catastrophe theory
RT discontinuity
divergence
predictions
∞ theories
topology

catchers
RT electron bunching
klystrons
output

catchment areas
USE **watersheds**

catecholamine
GS amines
. **catecholamine**
. . epinephrine
. . . norepinephrine
RT dopamine
hormones
neurotransmitters

categories
RT catalogs (publications)
classes
∞ groups
∞ sections

catenaries
GS geometry
. curves (geometry)
. . **catenaries**
. Euclidean geometry
. . analytic geometry
. . . **catenaries**

catheterization
RT blood vessels
intravenous procedures

cathetometers
GS measuring instruments
. optical measuring instruments
. . **cathetometers**
optical equipment
. optical measuring instruments
. . **cathetometers**

cathode glow
GS emission
. light emission
. . luminescence
. . . **cathode glow**
RT cathodoluminescence
glow discharges
rarefied plasmas

cathode ray tubes
DEF Vacuum tubes consisting essentially of an electron gun producing a concentrated electron beam (or cathode ray) which impinges on a phosphorescent coating on the back of a viewing face (or screen). The excitation of the phosphor produces light, the intensity of which is controlled by the flow of electrons. Deflection of the beam is achieved either electromagnetically by currents in coils around the tube, or electrostatically by voltages on internal deflection plates.
GS electron tubes
. vacuum tubes
. . **cathode ray tubes**
. . . monoscopes
. . . picture tubes
RT display devices
electron guns
electron optics
image tubes
magnetic lenses
oscilloscopes
printers
raster scanning
television equipment
video equipment

cathodes
DEF In electron tubes, electrodes through which a primary stream of electrons enters the interelectrode space.
GS electrodes
. **cathodes**
. . cell cathodes
. . hollow cathodes
. . tube cathodes
. . . cold cathodes
. . . hot cathodes
. . . photocathodes
. . . thermionic cathodes
. . . tunnel cathodes
RT anodes
cold cathode tubes
electrode materials
electron emission
∞ filaments
frequency modulation photomultipliers
photomultiplier tubes
phototubes
thermionics
tube anodes

cathodic coatings
DEF Material forming a continuous film on a base metal by mechanical coating or by electroplating.
GS coatings
. **cathodic coatings**
RT anodic coatings
cladding
electrode materials
electrodeposition
electroplating
metal oxides
oxide films
oxides
plating

cathodoluminescence
DEF Luminescence produced when high velocity electrons bombard a metal in a vacuum, thus vaporizing small amounts of the metal which, in an excited state, emit radiation characteristic of the metal.
GS emission
. light emission
. . luminescence
. . . **cathodoluminescence**
RT cathode glow
light sources
porous silicon
visible spectrum

catholytes
GS conductors
. electrolytes
. . **catholytes**
RT anolytes
cell cathodes
diaphragms (mechanics)

cations
DEF Positively-charged ions.
GS ions
. positive ions
. . **cations**
. . . formyl ions
. . . vanadyl radical
RT anions
cell cathodes
ionic mobility
metal ions

cats
GS animals
. vertebrates
. . mammals
. . . **cats**

CATT devices
DEF Controlled avalanche transit time triodes which use avalanche multiplication in the collector depletion region of a silicon, bipolar, transistor-like structure to increase the gain and thereby achieve a higher frequency operation of silicon bipolar transistors. Used for controlled avalanche transit time devices.
UF *controlled avalanche transit time devices*
RT electron avalanche
power gain
transit time
triodes

cattle
GS animals
. vertebrates
. . mammals
. . . **cattle**
. . . . calves
RT grazing
livestock
rangelands

CATV
USE **cable television**

Caucasus Mountains (U.S.S.R.)
GS landforms
. mountains
. . **Caucasus Mountains (U.S.S.R.)**
RT U.S.S.R.

Cauchy integral formula
GS analysis (mathematics)
. complex variables
. . **Cauchy integral formula**

Cauchy problem
UF *Riemann problem*
GS boundary value problems
. **Cauchy problem**
RT differential equations
∞ problems

Cauchy–Riemann equations
GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **Cauchy–Riemann equations**
RT analytic functions
∞ equations

caulking
DEF Material ranging in physical characteristics from plastic to solid to preformed. Used to seal and waterproof joints and overlaps in structures, other assemblies or portions thereof where movement may occur.
RT moisture resistance
plugging
sealing
waterproofing

causes
RT∞ effects
etiology
∞ origins
∞ sources

caustic lines
DEF The locations of wave front interactions induced by the maneuvers of supersonic aircraft in changing direction and/or attitude.
RT flight paths
shock waves
sonic booms
supersonic flight
wave fronts

caustics
USE **alkalies**

caustics (optics)
DEF The envelope of rays diffracted by surface defects in materials.
RT diffraction
fracture mechanics
∞ optics
polarized radiation
∞ rays
surface defects

caves
RT cavities
karst

kettles (geology)
underground structures

cavitation
USE **cavitation flow**

cavitation corrosion
GS corrosion
. **cavitation corrosion**
RT cavitation flow
corrosion prevention
corrosion resistance
corrosion tests
erosion

cavitation flow
DEF The formation of bubbles in a liquid, occurring whenever the static pressure at any point in the fluid flow becomes less than the fluid vapor pressure. Used for cavitation and gaseous cavitation.
UF *cavitation*
gaseous cavitation
GS fluid flow
. turbulent flow
. . **cavitation flow**
. . . supercavitating flow
RT bubbles
cavitation corrosion
erosion
flow distribution
impingement
separated flow
ultrasonic cleaning
vortices
wakes
water

cavities
UF *bores*
GS **cavities**
. laser cavities
RT apertures
boreholes
caves
cavity flow
∞ cells
crack geometry
cracks
defects
ducts
gas pockets
hole distribution (mechanics)
∞ holes
holes (mechanics)
∞ hollow
interstices
karst
kettles (geology)
leakage
openings
orifices
outlets
passageways
perforated plates
perforated shells
∞ perforation
ports (openings)
recesses
tooth diseases
vents
voids

cavitons
DEF Density cavities created by localized oscillating electric fields.
RT electric fields
plasma density
plasma physics
plasma resonance

cavity flow
(added November 1991)
GS fluid flow
. internal flow
. . **cavity flow**
RT cavities
channel flow
corner flow
ducted flow
engine inlets
∞ flow
fluid boundaries
open channel flow
pipe flow

cavity resonators
UF *resonant cavities*
GS resonators
. **cavity resonators**
. . superconducting cavity resonators
RT circulators (phase shift circuits)
cyclotron resonance devices
electron tubes
field mode theory
Helmholtz resonators
klystrons
magnetrons
microwave resonance
multimode resonators
oscillators
resonant frequencies
traveling wave masers
velocity modulation

cavity vapor generators
RT ∞ **generators**
vaporizers
vapors

cays
USE **keys (islands)**

CC-106 aircraft
USE **CL-44 aircraft**

CCD
USE **charge coupled devices**

CCD cameras
(added September 1995)
GS optical equipment
. cameras
. . **CCD cameras**
photographic equipment
. cameras
. . **CCD cameras**
RT CCD star tracker
charge coupled devices
Clementine spacecraft
photography

CCD star tracker
DEF Navigation instrument designed for the NASA space transportation system. Used for stellar (star tracker).
UF *Stellar (star tracker)*
GS tracking (position)
. **star trackers**
. . **CCD star tracker**
RT CCD cameras
celestial navigation
charge coupled devices
spacecraft guidance

CD-ROM
(added September 1992)
GS computer components
. computer storage devices
. . read-only memory devices
. . . **CD-ROM**
RT data bases
information retrieval
information systems
optical disks
optical memory (data storage)

CDC 180-A computer
GS data processing equipment
. computers
. . CDC computers
. . . **CDC 180-A computer**
. . digital computers
. . . **CDC 180-A computer**

CDC 1604 computer
GS data processing equipment
. computers
. . CDC computers
. . . **CDC 1604 computer**
. . digital computers
. . . **CDC 1604 computer**

CDC 3100 computer
GS data processing equipment
. computers
. . CDC computers
. . . **CDC 3100 computer**
. . digital computers
. . . **CDC 3100 computer**

CDC 3200 computer
GS data processing equipment
. computers
. . CDC computers
. . . **CDC 3200 computer**
. . digital computers
. . . **CDC 3200 computer**

CDC 3600 computer
GS data processing equipment
. computers
. . CDC computers
. . . **CDC 3600 computer**
. . digital computers
. . . **CDC 3600 computer**

CDC 3800 computer
GS data processing equipment
. computers
. . CDC computers
. . . **CDC 3800 computer**
. . digital computers
. . . **CDC 3800 computer**

CDC 6000 series computers
GS data processing equipment
. computers
. . CDC computers
. . . **CDC 6000 series computers**
. . . . CDC 6400 computer
. . . . CDC 6600 computer
. . . . CDC 6700 computer
. . digital computers
. . . **CDC 6000 series computers**
. . . . CDC 6400 computer
. . . . CDC 6600 computer
. . . . CDC 6700 computer

CDC 6400 computer
GS data processing equipment
. computers
. . CDC computers
. . . CDC 6000 series computers

. . . . **CDC 6400 computer**
. . digital computers
. . . CDC 6000 series computers
. . . . **CDC 6400 computer**

CDC 6600 computer
GS data processing equipment
. computers
. . CDC computers
. . . CDC 6000 series computers
. . . . **CDC 6600 computer**
. . digital computers
. . . CDC 6000 series computers
. . . . **CDC 6600 computer**

CDC 6700 computer
GS data processing equipment
. computers
. . CDC computers
. . . CDC 6000 series computers
. . . . **CDC 6700 computer**
. . digital computers
. . . CDC 6000 series computers
. . . . **CDC 6700 computer**

CDC 7000 series computers
GS data processing equipment
. computers
. . CDC computers
. . . **CDC 7000 series computers**
. . . . CDC 7600 computer
. . digital computers
. . . **CDC 7000 series computers**
. . . . CDC 7600 computer

CDC 7600 computer
GS data processing equipment
. computers
. . CDC computers
. . . CDC 7000 series computers
. . . . **CDC 7600 computer**
. . digital computers
. . . CDC 7000 series computers
. . . . **CDC 7600 computer**

CDC 8090 computer
GS data processing equipment
. computers
. . CDC computers
. . . **CDC 8090 computer**
. . digital computers
. . . **CDC 8090 computer**

CDC computers
GS data processing equipment
. computers
. . **CDC computers**
. . . CDC 160–A computer
. . . CDC 1604 computer
. . . CDC 3100 computer
. . . CDC 3200 computer
. . . CDC 3600 computer
. . . CDC 3800 computer
. . . CDC 6000 series computers
. . . . CDC 6400 computer
. . . . CDC 6600 computer
. . . . CDC 6700 computer
. . . CDC 7000 series computers
. . . . CDC 7600 computer
. . . CDC 8090 computer
. . . CDC Cyber 170 series computers
. . . . CDC Cyber 175 computer
. . . CDC Cyber 74 computer
. . . CDC Cyber 174 computer
. . . CDC Cyber 203 computer
. . . CDC Cyber 205 computer
. . . CDC Star 100 computer
RT digital computers

CDC Cyber 170 series computers
GS data processing equipment
. computers
. . CDC computers
. . . **CDC Cyber 170 series computers**
. . . . CDC Cyber 175 computer
. . digital computers
. . . **CDC Cyber 170 series computers**
. . . . CDC Cyber 175 computer

CDC Cyber 174 computer
GS data processing equipment
. computers
. . CDC computers
. . . **CDC Cyber 174 computer**
. . digital computers
. . . **CDC Cyber 174 computer**

CDC Cyber 175 computer
GS data processing equipment
. computers
. . CDC computers
. . . CDC Cyber 170 series computers
. . . . **CDC Cyber 175 computer**
. . digital computers
. . . CDC Cyber 170 series computers
. . . . **CDC Cyber 175 computer**

CDC Cyber 203 computer
GS data processing equipment
. computers
. . CDC computers
. . . **CDC Cyber 203 computer**
. . digital computers
. . . **CDC Cyber 203 computer**

CDC Cyber 205 computer
GS data processing equipment
. computers
. . CDC computers
. . . **CDC Cyber 205 computer**
. . digital computers
. . . **CDC Cyber 205 computer**

CDC Cyber 74 computer
UF *Cyber 74 computer*
GS data processing equipment
. computers
. . CDC computers
. . . **CDC Cyber 74 computer**
. . digital computers
. . . **CDC Cyber 74 computer**

CDC Star 100 computer
GS data processing equipment
. computers
. . CDC computers
. . . **CDC Star 100 computer**
. . digital computers
. . . **CDC Star 100 computer**

CDMA
USE **code division multiple access**

Cedar Rapids (IA)
GS cities
. **Cedar Rapids (IA)**
RT Iowa

CEFOAM checkout equipment
RT checkout
∞ **test equipment**

ceiling (aircraft capability)
RT∞ aircraft
aircraft specifications
∞ ceilings
flight altitude
flight characteristics

∞ **ceilings**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ceiling (aircraft capability)
ceilings (architecture)
ceilings (meteorology)

ceilings (architecture)
RT buildings
∞ ceilings
∞ diffusers
floors
insulation
panels
reflectors

ceilings (meteorology)
DEF The height above the Earth's surface of the lowest layer of clouds or obscuring phenomena that is reported as "broken", overcast" or "obscuration" and not classified as "thin" or "partial".
RT aircraft landing
∞ ceilings
cloud height indicators
meteorological parameters
meteorology
visibility

ceilometers
USE **cloud height indicators**

celescopes
GS electron tubes
. vacuum tubes
. . microwave tubes
. . . **celescopes**
microwave equipment
. microwave tubes
. . **celescopes**
mirrors
. **celescopes**
optical equipment
. image converters
. . **celescopes**
telescopes
. **celescopes**
RT solar instruments

celestial bodies
DEF Any aggregations of matter in space constituting a unit for astronomical study, as the sun, moon, a planet, comet, star, or nebula. Also called heavenly bodies.
GS **celestial bodies**
. asteroid belts
. . Toro asteroid
. asteroids
. . Amor asteroid
. . Amphitrite asteroid
. . Apollo asteroids
. . Ceres asteroid
. . Chiron
. . EROS asteroid
. . Gaspra asteroid
. . Icarus asteroid
. . Ida asteroid
. . Toro asteroid
. . Toutatis asteroid
. . Vesta asteroid
. blazars
. . BL Lacertae objects
. comet heads
. comet nuclei
. comet tails

- comets
  - Arend–Roland comet
  - Austin comet
  - Bronsen–Metcalf comet
  - Encke comet
  - Giacobini–Zinner comet
  - Grigg–Skjellerup comet
  - Halley's comet
  - Humason comet
  - IRAS–Araki–Alcock comet
  - Kohoutek comet
  - Morehouse comet
  - Mrkos comet
  - Okazaki–Levy–Rudenko comet
  - Schwassmann–Wachmann comet
  - Shoemaker–Levy 9 comet
  - Tempel 2 comet
  - West comet
- faint objects
- galactic clusters
  - local group (astronomy)
  - Virgo galactic cluster
- galaxies
  - active galaxies
    - Markarian galaxies
    - radio galaxies
    - Seyfert galaxies
  - compact galaxies
  - disk galaxies
  - dwarf galaxies
  - elliptical galaxies
  - interacting galaxies
  - irregular galaxies
  - Maffei galaxies
  - Magellanic clouds
  - peculiar galaxies
  - ring galaxies
  - shell galaxies
  - spiral galaxies
    - Andromeda Galaxy
    - barred galaxies
    - Milky Way Galaxy
  - starburst galaxies
  - Virgo galactic cluster
- infrared sources (astronomy)
  - infrared stars
- meteorites
  - iron meteorites
    - Arbos meteorite
    - Lazarev meteorite
    - Odessa meteorite
    - Sikhote-Alin meteorite
  - micrometeorites
  - stony meteorites
    - achondrites
      - Bondoc meteorite
      - chassignites
      - Kapoeta achondrite
      - nakhlites
      - Norton County achondrite
      - shergottites
      - ureilites
    - carbonaceous meteorites
      - carbonaceous chondrites
        - Alais meteorite
        - Allende meteorite
        - Cold Bokkeveld meteorite
        - Ivuna meteorite
        - Murchison meteorite
        - Murray meteorite
        - Orgueil meteorite
        - Tonk meteorite
      - ureilites
    - chondrites
      - Bruderheim meteorite
      - carbonaceous chondrites
        - Alais meteorite
        - Allende meteorite
        - Cold Bokkeveld meteorite
        - Ivuna meteorite
        - Murchison meteorite
        - Murray meteorite
        - Orgueil meteorite
        - Tonk meteorite
      - Harleton meteorite
      - Hvittis chondrite
      - Okhansk meteorite
      - Pantar chondrites
      - Pribram meteorite
    - tektites
      - australites
      - bediasites
    - Tunguska meteorite
  - stony-iron meteorites
- meteoroid showers
  - Aquarid meteoroids
  - Arietid meteoroids
  - Cyrillid meteoroids
  - Draconid meteoroids
  - Geminid meteoroids
  - Leonid meteoroids
  - Orionid meteoroids
  - Perseid meteoroids
  - Quadrantid meteoroids
  - Taurid meteoroids
- meteoroids
  - Aquarid meteoroids
  - Arietid meteoroids
  - bolides
    - Cyrillid meteoroids
    - Draconid meteoroids
    - Geminid meteoroids
    - Leonid meteoroids
  - micrometeoroids
  - meteoroid dust clouds
    - zodiacal dust
  - Orionid meteoroids
  - Perseid meteoroids
  - Quadrantid meteoroids
  - radio meteors
  - sporadic meteoroids
  - Taurid meteoroids
- moonlets
- natural satellites
  - icy satellites
    - Ariel
    - Callisto
    - Dione
    - Enceladus
    - Europa
    - Ganymede
    - Hyperion
    - Iapetus
    - Mimas
    - Rhea (astronomy)
    - Tethys
    - Titania
  - Jupiter satellites
    - Adrastea
    - Amalthea
    - Carme
    - Elara
    - Galilean satellites
      - Callisto
      - Europa
      - Ganymede
      - Io
    - Himalia
    - Leda
    - Lysithea
    - Metis
    - Pasiphae
    - Sinope
    - Thebe
  - Mars satellites
    - Deimos
    - Phobos
  - moon
  - Neptune satellites
    - Galatea
    - Larissa
    - Naiad
    - Nereid
    - Proteus
    - Triton
  - Pluto satellites
    - Charon
  - Saturn satellites
    - Calypso
    - Dione
    - Enceladus
    - Epimetheus
    - Helene
    - Hyperion
    - Iapetus
    - Janus
    - Mimas
    - Pandora
    - Phoebe
    - Prometheus
    - Rhea (astronomy)
    - Telesto
    - Tethys
    - Titan
  - Uranus satellites
    - Ariel
    - Cordelia
    - Miranda
    - Oberon
    - Puck
    - Titania
    - Umbriel
- nebulae
  - Cassiopeia A
  - Crab nebula
  - Gum nebula
  - H I regions
  - H II regions
  - Herbig-Haro objects
  - Orion nebula
  - planetary nebulae
  - reflection nebulae
- planetary rings
  - Jupiter rings
  - Saturn rings
  - Uranus rings
- planets
  - extrasolar planets
  - gas giant planets
    - Jupiter (planet)
    - Neptune (planet)
    - Saturn (planet)
    - Uranus (planet)
  - Pluto (planet)
  - terrestrial planets
    - Earth (planet)
    - Mars (planet)
    - Mercury (planet)
    - Venus (planet)
- protoplanets
- radio sources (astronomy)
  - Cassiopeia A
  - extragalactic radio sources
    - radio galaxies
    - radio jets (astronomy)
  - quasars
  - radio stars
    - pulsars

. solar system
. star clusters
. . globular clusters
. . open clusters
. . . Pleiades cluster
. . . Praesepe star clusters
. stars
. . black holes (astronomy)
. . brown dwarf stars
. . double stars
. . . binary stars
. . . . cataclysmic variables
. . . . companion stars
. . . . . Nemesis (star)
. . . . eclipsing binary stars
. . . . . dwarf novae
. . . . . Lambda Tauri stars
. . . . . Zeta Aurigae star
. . . . Sigma Orionis
. . . . symbiotic stars
. . . . x ray binaries
. . early stars
. . . hot stars
. . . . A stars
. . . . B stars
. . . . . shell stars
. . . . . Sigma Orionis
. . . . blue stars
. . . . O stars
. . . . white dwarf stars
. . . . Wolf-Rayet stars
. . F stars
. . G stars
. . . sun
. . giant stars
. . . asymptotic giant branch stars
. . . Omicron Ceti star
. . . red giant stars
. . . . carbon stars
. . horizontal branch stars
. . infrared stars
. . late stars
. . . cool stars
. . . . carbon stars
. . . . flare stars
. . . . K stars
. . . . M stars
. . . . . Van Biesbroeck star
. . . . Mira variables
. . . . . Omicron Ceti star
. . . . S stars
. . magnetic stars
. . main sequence stars
. . . dwarf stars
. . . . dwarf novae
. . . . flare stars
. . . . red dwarf stars
. . . sun
. . massive stars
. . metallic stars
. . neutron stars
. . . pulsars
. . peculiar stars
. . . shell stars
. . . Sigma Orionis
. . . symbiotic stars
. . Praesepe star clusters
. . protostars
. . . pre-main sequence stars
. . . . T Tauri stars
. . radio stars
. . . pulsars
. . reference stars
. . subdwarf stars
. . subgiant stars
. . supergiant stars
. . . R Coronae Borealis stars
. . supermassive stars
. . triple stars
. . variable stars
. . . cataclysmic variables
. . . cepheid variables
. . . flare stars
. . . irregular variable stars
. . . . R Coronae Borealis stars
. . . Lambda Tauri stars
. . . Mira variables
. . . . Omicron Ceti star
. . . novae
. . . . dwarf novae
. . . . Hercules nova
. . . semiregular variable stars
. . . supernovae
. . . . supernova 1987A
. . . symbiotic stars
. . . T Tauri stars
. . white holes (astronomy)
. . x ray stars
. . . x ray binaries
. stellar systems

RT Aries constellation
asteroid capture
astrodynamics
astrolabes
astronomical observatories
astronomy
astrophysics
∞ bodies
Cassiopeia constellation
Centaurus constellation
Corona Borealis constellation
Cygnus constellation
gravitational waves
impact melts
interstellar matter
Lyra constellation
orbits
solar neighborhood
space flight
universe

celestial geodesy
DEF The determination of the form of the Earth, of the Earth's gravitational field, and of relative positions of satellite trajectories.
GS geodesy
. **celestial geodesy**
RT Explorer 29 satellite
Explorer 36 satellite
geodetic satellites
GEOS 1 satellite
GEOS 2 satellite
GEOS 3 satellite
International Satellite Geodesy Experiment
time

celestial mechanics
DEF The study of the theory of motions of celestial bodies under the influence of gravitational fields.
GS classical mechanics
. space mechanics
. . **celestial mechanics**
RT astrodynamics
astronomy
astrophysics
ephemerides
equations of motion
four body problem
gravitational waves
hyperbolic trajectories
Lagrangian equilibrium points
long term effects
many body problem
∞ mechanics (physics)
orbital mechanics
orbital resonances (celestial mechanics)
orbits
perturbation theory
planets
Roche limit
Schach effect
solar system
stars
stellar orbits
sun
terrestrial planets
three body problem
trajectory analysis
Trojan orbits
two body problem
Wolf-Rayet stars

celestial navigation
DEF The process of directing a craft from one point to another by reference to celestial bodies of known constants.
GS navigation
. **celestial navigation**
. . Astroguide Navigation System
. . astronavigation
RT air navigation
autonomous navigation
CCD star tracker
inertial navigation
injection guidance
interplanetary navigation
polar navigation
radar navigation
radio navigation
reference stars
solar position
space navigation
spacecraft guidance
star trackers
surface navigation

celestial observation
USE **astronomy**

celestial reference systems
RT air navigation
astronomical coordinates
astronomical maps
azimuth
coordinates
geocentric coordinates
inertial reference systems
interplanetary navigation
interstellar travel
laser guide stars
planetocentric coordinates
∞ reference systems
solar longitude
spherical coordinates
∞ systems

celestial sphere
DEF An imaginary sphere of infinite radius concentric with the Earth, on which all celestial bodies except the Earth are assumed to be projected.
GS symmetrical bodies
. bodies of revolution
. . spheres
. . . **celestial sphere**
RT Aries constellation
astronomical maps

Cassiopeia constellation
Centaurus constellation
constellations
Corona Borealis constellation
Cygnus constellation
horizon
Lyra constellation
orbital position estimation
planispheres
zenith

cell anodes
GS electrodes
. anodes
. . **cell anodes**
RT anions
anolytes
cell cathodes
electrode materials

cell cathodes
GS electrodes
. cathodes
. . **cell cathodes**
RT catholytes
cations
cell anodes
electrode materials
electrodeposition

cell division
GS cytogenesis
. **cell division**
RT ∞ division
mitosis
reproduction (biology)

cell membranes (biology)
GS membranes
. **cell membranes (biology)**
RT cells (biology)
cytology
osmosis

cellophane
RT cellulose
∞ polymers

∞ **cells**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT activation (biology)
cavities
cells (biology)
compartments
cores
electrochemical cells
electrolytic cells
filters
fuel cells
geophysical fluid flow cells
hexagonal cells
honeycomb structures
Kerr cells
lithium sulfur batteries
particle in cell technique
photoconductive cells
photoelectric cells
photovoltaic cells
porous materials
resolution cell
solar cells
tissues (biology)
topology

cells (biology)
UF *biological cells*
GS **cells (biology)**
. blood cells
. . erythrocytes
. . . reticulocytes
. . hemocytes
. . leukocytes
. . . eosinophils
. . . lymphocytes
. eukaryotes
. fibroblasts
. gametocytes
. . eggs
. . spermatozoa
. macrophages
. neurons
. . axons
. . neurobiasts
. prokaryotes
. protoplasts
RT anatomy
∞ biology
cancer
catalase
cell membranes (biology)
∞ cells
chlorophylls
chloroplasts
chromosomes
cloning (biology)
cytogenesis
cytology
cytometry
cytoplasm
endoplasmic reticulum
endothelium
ganglia
hematopoiesis
hemoglobin
histochemical analysis
Krebs cycle
lysosomes
mitochondria
mitosis
mutagens
mutations
neuroglia
neurotransmitters
nuclei (cytology)
organelles
organs
plasmolysis
sarcoplasmic reticulum
tissues (biology)

cellular materials (non biological)
USE **foams**

cellulose
DEF The carbohydrate that is the principal constituent of wood and forms of structural framework of the wood cells.
GS organic compounds
. carbohydrates
. . polysaccharides
. . . **cellulose**
. . . . Fortisan (trademark)
RT cellophane
lignin
Masonite (trademark)
synthetic food
tenite
wood

cellulose nitrate
UF *nitrocellulose*
pyroxylin
GS esters
. organic nitrates
. . **cellulose nitrate**
explosives
. **cellulose nitrate**
nitrogen compounds
. nitrates
. . organic nitrates
. . . **cellulose nitrate**
RT double base propellants
double base rocket propellants

cementation
RT adhesive bonding
agglomeration
agglutination
bonding
heating
precipitation (chemistry)

cementite
DEF An intermetallic compound containing iron and carbon.
GS carbon compounds
. carbides
. . **cementite**
RT iron alloys
microstructure
pearlite
steels

cements
RT adhesives
binders (materials)
bricks
concretes
∞ construction materials
grout
masonry
mortars (material)
sealing

CEMS system
USE **Central Electronic Management System**

Cenozoic Era
(added June 1989)
DEF An era of geologic time, from the beginning of the Tertiary Period to the present. (Some authors do not include the Quaternary, considering it a separate era.) It is characterized by the evolution and abundance of mammals, advanced mollusks, and birds and paleobotanically, by angiosperms. The Cenozoic Era is considered to have begun about 65 million years ago.
GS **Cenozoic Era**
. Tertiary Period
RT Cretaceous–Tertiary boundary
extinction
geochronology
paleontology

censored data (mathematics)
GS data processing
. **censored data (mathematics)**
RT approximation
∞ data
error analysis
probability density functions
reliability
sampling
statistical analysis
statistical distributions

census
RT animals
demography

human beings
∞ statistics
urban planning

Centaur launch vehicle
UF *Centaur vehicle*
GS launch vehicles
. **Centaur launch vehicle**
. . Atlas Centaur launch vehicle
rocket vehicles
. **Centaur launch vehicle**
. . Atlas Centaur launch vehicle
RT Atlas D ICBM
liquid propellant rocket engines
Saturn project
Titan Centaur launch vehicle

Centaur project
GS programs
. NASA programs
. . NASA space programs
. . . **Centaur project**
. projects
. . **Centaur project**
. space programs
. . NASA space programs
. . . **Centaur project**
RT Atlas Centaur launch vehicle
launch vehicles
Mariner program
RL-10 engines
Surveyor project

Centaur vehicle
USE **Centaur launch vehicle**

Centaurus constellation
GS constellations
. **Centaurus constellation**
RT celestial bodies
celestial sphere
stars

center of gravity
DEF The center of mass of a system of masses, as the barycenter of the Earth–moon system. Used for barycenter.
UF *barycenter*
RT center of mass
∞ centers
centroids
gravitational fields
lunar rotation
mass
moments of inertia

center of mass
DEF A point of a material body or system of bodies which moves as though the system's total mass existed at that point and all external forces were applied at the point.
GS mass
. **center of mass**
RT center of gravity
mascons
weight (mass)

center of pressure
RT ∞ centers
hydrostatic pressure
moments of inertia
pressure
pressure distribution
pressure heads

centerbodies
RT afterbodies
aircraft structures
∞ bodies
cylindrical bodies
forebodies
fuselages

∞ **centers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT center of gravity
center of pressure
color centers
concentricity
foci
loci
world data centers

centimeter waves
DEF Electromagnetic radiation in the 3,000 to 30,000 MHz range.
GS electromagnetic radiation
. radio waves
. . short wave radiation
. . . microwaves
. . . . **centimeter waves**
RT cosmic noise
extraterrestrial radio waves
microwave frequencies
superhigh frequencies

Central African Republic
GS nations
. **Central African Republic**
RT Africa

Central America
GS regions
. **Central America**
RT Belize
Costa Rica
El Salvador
Guatemala
Honduras
Nicaragua
North America
Panama
Panama Canal Zone
South America

Central Atlantic Region (US)
GS regions
. **Central Atlantic Region (US)**
RT United States

Central Atlantic Regional Ecol Test Site
SN (CENTRAL ATLANTIC REGIONAL ECOLOGICAL TEST SITE)
UF *CARETS (test site)*
GS sites
. **Central Atlantic Regional Ecol Test Site**
test facilities
. **Central Atlantic Regional Ecol Test Site**
RT ecology
environment protection

central bulge (galaxies)
USE **galactic bulge**

Central Electronic Management System
UF *CEMS system*
GS data processing
. **Central Electronic Management System**
RT management
∞ systems

Central Europe
GS continents
. Europe
. . **Central Europe**
regions
. **Central Europe**
RT Austria
continents
Czechoslovakia
East Germany
Germany
Hungary
Poland
Romania
West Germany

central nervous system
GS anatomy
. nervous system
. . **central nervous system**
. . . brain
. . . . brain stem
. . . . cerebellum
. . . . cerebral ventricles
. . . . cerebrum
. . . . . cerebral cortex
. . . . . occipital lobes
. . . . diencephalon
. . . . . hypothalamus
. . . . . pineal gland
. . . . . thalamus
. . . . hippocampus
. . . spinal cord
RT blood–brain barrier
psychopharmacology
psychotropic drugs
∞ systems

central nervous system depressants
GS depressants
. **central nervous system depressants**
drugs
. **central nervous system depressants**
RT amobarbital
psychopharmacology
∞ systems
tranquilizers

central nervous system stimulants
GS drugs
. stimulants
. . **central nervous system stimulants**
RT amphetamines
psychopharmacology
∞ systems

Central Piedmont (US)
GS landforms
. terraces (landforms)
. . plateaus
. . . piedmonts
. . . . **Central Piedmont (US)**
RT mountains

central processing units
DEF The units of computing systems that include the circuits controlling the interpretation of instructions and their execution. Used for processors (computers).
UF *processors (computers)*
GS computer components
. **central processing units**
. . arithmetic and logic units
. . RISC processors
RT chips (electronics)
computer storage devices
computers
control units (computers)

logic circuits
microprocessors
registers (computers)

centrifugal casting
GS forming techniques
. casting
. . **centrifugal casting**
RT investment casting

centrifugal compressors
GS compressors
. **centrifugal compressors**
turbomachinery
. **centrifugal compressors**
RT blowers
compressor blades
compressor rotors
impellers
pump impellers
pumps
radial flow
rotors
superchargers
turbocompressors

centrifugal force
DEF The apparent force in a rotating system, deflecting masses radially from the axis of rotation.
RT angular acceleration
centrifuges
centripetal force
∞ force
Goertler instability

centrifugal pumps
GS pumps
. **centrifugal pumps**
turbomachinery
. **centrifugal pumps**
RT axial flow pumps
fuel pumps
impellers
pump impellers
turbine pumps
turbocompressors

centrifuges
DEF Specifically in aerospace, large motor driven apparatus with long arms at the end of which human and animal subjects or equipment can be revolved and rotated at various speeds to simulate (very closely) the (prolonged) accelerations in high performance aircraft, rockets, and spacecraft. Sometimes called astronautic centrifuges. Used for cyclones (equipment).
UF *cyclones (equipment)*
GS **centrifuges**
. human centrifuges
RT centrifugal force
centrifuging
centripetal force
classifiers
concentrators
extraction
flight simulators
fluid filters
high gravity environments
separators
space simulators
∞ test equipment
training simulators

centrifuging
RT centrifuges
concentrating
extraction
materials recovery
∞ separation
swirling

centrifuging stress
GS stress (biology)
. acceleration stresses (physiology)
. . **centrifuging stress**
stress (physiology)
. acceleration stresses (physiology)
. . **centrifuging stress**
RT acceleration tolerance
gravitational physiology

centripetal force
RT angular acceleration
centrifugal force
centrifuges
∞ force
revolving

centroids
RT center of gravity
moments of inertia

Centurion aircraft
USE **Cessna 210 aircraft**

cephalagia
USE **headache**

cephalopods
GS animals
. invertebrates
. . molluscs
. . . **cephalopods**
. . . . octopuses

cepheid variables
GS celestial bodies
. **stars**
. . variable stars
. . . **cepheid variables**
RT Cepheus constellation

Cepheus constellation
GS constellations
. **Cepheus constellation**
RT cepheid variables

cepstra
DEF The Fourier transformation of the logarithm of the power spectrum.
GS spectra
. power spectra
. . **cepstra**
RT quefrencies

cepstral analysis
DEF The application of cepstral methods to wave or signal phenomena in seismology, speech analysis, echos, underwater acoustics, etc.
GS data processing
. signal analysis
. . **cepstral analysis**
. voice data processing
. . **cepstral analysis**
spectrum analysis
. **cepstral analysis**
RT acoustic measurement
audio frequencies
echoes
multipath transmission
power spectra
signal reflection
signature analysis
spectral signatures
speech recognition
time lag
vibration measurement

ceramal protective coatings
USE **cermets**
protective coatings

ceramals
USE **cermets**

ceramic bonding
GS bonding
. **ceramic bonding**
RT ceramic matrix composites
ceramics

ceramic coatings
SN (COATINGS CONSISTING OF CERAMIC MATERIALS)
GS coatings
. inorganic coatings
. . **ceramic coatings**
. protective coatings
. . **ceramic coatings**
RT finishes
metal coatings
porcelain
sprayed coatings
vacuum deposition

ceramic fibers
DEF Fibers composed of ceramic materials. They are usually used for reinforcement.
GS fibers
. synthetic fibers
. . **ceramic fibers**
RT boron carbides
ceramic matrix composites
ceramics
chemical vapor infiltration
composite wrapping
cordage
fiber composites
fiber orientation
fiber strength
filament winding
∞ filaments
polycarbosilanes
reinforcing fibers
silicon carbides
strands
titanium carbides

ceramic honeycombs
RT ceramic matrix composites
honeycomb cores
honeycomb structures

ceramic matrix composites
DEF Composite materials consisting of a reinforced ceramic matrix.
GS composite materials
. **ceramic matrix composites**
RT aircraft construction materials
boron reinforced materials
ceramic bonding
ceramic fibers
ceramic honeycombs
ceramics
cermets
chemical vapor infiltration
composite structures
crack bridging
fiber pullout
functionally gradient materials
matrix materials
reinforcing fibers
silicon nitrides
titanium carbides
titanium nitrides

ceramic nuclear fuels
GS ceramics
. ceramic nuclear fuels
fuels
. nuclear fuels
. . ceramic nuclear fuels
RT carbides
cermets
nitrides
plutonium compounds
plutonium oxides
sol–gel processes
thorium compounds
uranium carbides
uranium compounds
uranium oxides

ceramic–metal composites
USE **cermets**

ceramics
DEF Inorganic compounds or mixtures requiring heat treatment to fuse them into homogenous masses usually possessing high temperature strength but low ductility. Types and uses range from china for dishes to refractory liners for nozzles.
GS **ceramics**
. ceramic nuclear fuels
. lead zirconate titanates
. piezoelectric ceramics
. porcelain
. Pyroceram (trademark)
RT abrasives
Bakelite (trademark)
bricks
ceramic bonding
ceramic fibers
ceramic matrix composites
cermets
clays
dielectrics
ferroelectric materials
frit
glass
glazes
heat engines
high temperature superconductors
injection molding
masonry
∞ materials science
mortars (material)
photoacoustic microscopy
pyrolytic materials
reaction bonding
refractories
refractory coatings
refractory materials
sialon
silicon dioxide
tiles
vitrification
YBCO superconductors
yttria-stabilized zirconia

cerebellum
GS anatomy
. nervous system
. . central nervous system
. . . brain
. . . . **cerebellum**

cerebral cortex
GS anatomy
. nervous system
. . central nervous system
. . . brain
. . . . cerebrum
. . . . . **cerebral cortex**
RT ∞ cortexes

cerebral vascular accidents
RT cardiovascular system
∞ strokes

cerebral ventricles
GS anatomy
. nervous system
. . central nervous system
. . . brain
. . . . **cerebral ventricles**
RT cerebrospinal fluid
cerebrum

cerebrospinal fluid
GS body fluids
. **cerebrospinal fluid**
RT brain
cerebral ventricles
∞ fluids

cerebrum
GS anatomy
. nervous system
. . central nervous system
. . . brain
. . . . **cerebrum**
. . . . . cerebral cortex
. . . . . occipital lobes
RT cerebral ventricles

Cerenkov counters
GS measuring instruments
. counters
. . radiation counters
. . . **Cerenkov counters**
. radiation measuring instruments
. . radiation counters
. . . **Cerenkov counters**
RT scintillation counters

Cerenkov effect
USE **Cerenkov radiation**

Cerenkov radiation
DEF The radiation from a charged particle whose velocity is greater than the phase velocity that an electromagnetic wave would have if it were propagating in the medium. The particle will continue to lose energy by radiation until its velocity is less than this phase velocity. Used for Cerenkov effect.
UF *Cerenkov effect*
GS electromagnetic radiation
. **Cerenkov radiation**
RT bremsstrahlung
corpuscular radiation
cosmic rays
∞ effects
gamma ray bursts
gamma rays
light (visible radiation)
nuclear radiation
∞ radiation
ultraviolet radiation

Ceres asteroid
GS celestial bodies
. asteroids
. . **Ceres asteroid**
RT asteroid belts

ceresin
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . paraffins
. . . . . **ceresin**
waxes
. **ceresin**
RT phase change materials

cerium
GS chemical elements
. rare earth elements
. . **cerium**
. . . cerium isotopes
. . . . cerium 137
. . . . cerium 144
metals
. rare earth elements
. . **cerium**
. . . cerium isotopes
. . . . cerium 137
. . . . cerium 144

cerium 137
GS chemical elements
. nuclides
. . isotopes
. . . cerium isotopes
. . . . **cerium 137**
. . . radioactive isotopes
. . . . **cerium 137**
. rare earth elements
. . cerium
. . . cerium isotopes
. . . . **cerium 137**
metals
. rare earth elements
. . cerium
. . . cerium isotopes
. . . . **cerium 137**

cerium 144
GS chemical elements
. nuclides
. . isotopes
. . . cerium isotopes
. . . . **cerium 144**
. . . radioactive isotopes
. . . . **cerium 144**
. rare earth elements
. . cerium
. . . cerium isotopes
. . . . **cerium 144**
metals
. rare earth elements
. . cerium
. . . cerium isotopes
. . . . **cerium 144**

cerium compounds
GS rare earth compounds
. **cerium compounds**
. . bastnasite
. . cerium oxides
RT ∞ chemical compounds
∞ metal compounds

cerium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **cerium isotopes**
. . . . cerium 137
. . . . cerium 144
. rare earth elements
. . cerium
. . . **cerium isotopes**
. . . . cerium 137
. . . . cerium 144
metals

. rare earth elements
. . cerium
. . . **cerium isotopes**
. . . . cerium 137
. . . . cerium 144

cerium oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **cerium oxides**
rare earth compounds
. cerium compounds
. . **cerium oxides**

cermets
DEF Bodies consisting of ceramic particles bonded with a metal; used in aircraft, rockets, and spacecraft for high strength, high temperature applications. The name is derived from a combination of CERamic and METal. Used for cermet protective coatings and cermets.
UF *cermet protective coatings*
cermets
ceramic–metal composites
GS composite materials
. **cermets**
RT ceramic matrix composites
ceramic nuclear fuels
ceramics
combustion synthesis
heat resistant alloys
metals
powder metallurgy
refractories
refractory materials
YBCO superconductors

certification
DEF Personnel – The act of verifying and documenting that personnel have completed required training and have demonstrated specific proficiency. Process & Software – An act, whereby a responsible official provides a written guarantee that a product, process, or service satisfies all performance and design requirements.
RT aircraft reliability
checkout
evaluation
flight tests
performance tests
physiological tests
psychological tests
qualifications
quality control
selection
site selection
training evaluation

cesium
GS chemical elements
. alkali metals
. . **cesium**
. . . cesium isotopes
. . . . cesium 133
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144
metals
. alkali metals
. . **cesium**
. . . cesium isotopes
. . . . cesium 133
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144
RT cesium alloys
cesium antimonides
cesium bromides
cesium diodes
cesium engines
cesium fluorides
cesium halides
cesium hydrides
cesium iodides
cesium ions
cesium plasma
cesium vapor

cesium 133
GS chemical elements
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 133**
. nuclides
. . isotopes
. . . cesium isotopes
. . . . **cesium 133**
metals
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 133**

cesium 134
GS chemical elements
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 134**
. nuclides
. . isotopes
. . . cesium isotopes
. . . . **cesium 134**
. . . radioactive isotopes
. . . . **cesium 134**
metals
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 134**

cesium 137
GS chemical elements
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 137**
. nuclides
. . isotopes
. . . cesium isotopes
. . . . **cesium 137**
. . . radioactive isotopes
. . . . **cesium 137**
metals
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 137**

cesium 144
GS chemical elements
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 144**
. nuclides
. . isotopes
. . . cesium isotopes
. . . . **cesium 144**
. . . radioactive isotopes
. . . . **cesium 144**
metals
. alkali metals
. . cesium
. . . cesium isotopes
. . . . **cesium 144**

cesium alloys
GS alloys
. **cesium alloys**
RT alkali metals
cesium

cesium antimonides
GS antimony compounds
. antimonides
. . **cesium antimonides**
cesium compounds
. **cesium antimonides**
RT cesium

cesium bromides
GS cesium compounds
. cesium halides
. . **cesium bromides**
halogen compounds
. bromine compounds
. . bromides
. . . **cesium bromides**
. halides
. . bromides
. . . **cesium bromides**
. . metal halides
. . . alkali halides
. . . . cesium halides
. . . . . **cesium bromides**
RT cesium

cesium compounds
GS **cesium compounds**
. cesium antimonides
. cesium halides
. . cesium bromides
. . cesium fluorides
. . cesium iodides
. cesium hydrides
. cesium oxides
RT ∞ alkali metal compounds
∞ chemical compounds
∞ metal compounds
metal fuels

cesium diodes
GS electron tubes
. thermionic diodes
. . **cesium diodes**
. vacuum tubes
. . **cesium diodes**
electronic equipment
. diodes
. . thermionic diodes
. . . **cesium diodes**
RT cesium
plasma diodes
thermionic converters

cesium engines
GS engines
. rocket engines
. . electric rocket engines
. . . ion engines
. . . . **cesium engines**
RT cesium
electrostatic engines

cesium fluorides
GS cesium compounds
. cesium halides
. . **cesium fluorides**
halogen compounds

. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **cesium fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **cesium fluorides**
. . metal halides
. . . alkali halides
. . . . cesium halides
. . . . . **cesium fluorides**
. . . metal fluorides
. . . . **cesium fluorides**
RT cesium

cesium halides
GS cesium compounds
. **cesium halides**
. . cesium bromides
. . cesium fluorides
. . cesium iodides
halogen compounds
. halides
. . metal halides
. . . alkali halides
. . . . **cesium halides**
. . . . . cesium bromides
. . . . . cesium fluorides
. . . . . cesium iodides
RT cesium

cesium hydrides
GS cesium compounds
. **cesium hydrides**
hydrogen compounds
. hydrides
. . metal hydrides
. . . **cesium hydrides**
RT cesium

cesium iodides
GS cesium compounds
. cesium halides
. . **cesium iodides**
halogen compounds
. halides
. . metal halides
. . . alkali halides
. . . . cesium halides
. . . . . **cesium iodides**
. iodine compounds
. . iodides
. . . **cesium iodides**
RT cesium

cesium ions
GS ions
. **cesium ions**
RT cesium

cesium isotopes
GS chemical elements
. alkali metals
. . cesium
. . . **cesium isotopes**
. . . . cesium 133
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144
. nuclides
. . isotopes
. . . **cesium isotopes**
. . . . cesium 133
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144
metals
. alkali metals
. . cesium
. . . **cesium isotopes**
. . . . cesium 133
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144

cesium oxides
GS cesium compounds
. **cesium oxides**
chalcogenides
. oxides
. . metal oxides
. . . **cesium oxides**

cesium plasma
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . metallic plasmas
. . . . . **cesium plasma**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . metallic plasmas
. . . . . **cesium plasma**
RT cesium
thermionic converters

cesium vapor
GS chemical elements
. alkali metals
. . **cesium vapor**
. nuclides
. . isotopes
. . . **cesium vapor**
metals
. alkali metals
. . **cesium vapor**
vapors
. **cesium vapor**
RT cesium
mercury vapor

Cessna 172 aircraft
GS Cessna aircraft
. **Cessna 172 aircraft**
general aviation aircraft
. **Cessna 172 aircraft**
light aircraft
. **Cessna 172 aircraft**
monoplanes
. **Cessna 172 aircraft**
passenger aircraft
. **Cessna 172 aircraft**
single engine aircraft
. **Cessna 172 aircraft**
RT ∞ aircraft

Cessna 205 aircraft
GS Cessna aircraft
. **Cessna 205 aircraft**
general aviation aircraft
. **Cessna 205 aircraft**
light aircraft
. **Cessna 205 aircraft**
monoplanes
. **Cessna 205 aircraft**
passenger aircraft
. **Cessna 205 aircraft**
single engine aircraft
. **Cessna 205 aircraft**
RT ∞ aircraft

Cessna 210 aircraft
UF *Centurion aircraft*
GS Cessna aircraft
. **Cessna 210 aircraft**
general aviation aircraft
. **Cessna 210 aircraft**
light aircraft
. **Cessna 210 aircraft**
monoplanes
. **Cessna 210 aircraft**
passenger aircraft
. **Cessna 210 aircraft**
single engine aircraft
. **Cessna 210 aircraft**

Cessna 402B aircraft
DEF A lighter, twin-engine, short-haul cargo/passenger aircraft manufactured by the Cessna Aircraft Company.
GS Cessna aircraft
. **Cessna 402B aircraft**
general aviation aircraft
. **Cessna 402B aircraft**
light aircraft
. **Cessna 402B aircraft**
monoplanes
. **Cessna 402B aircraft**
passenger aircraft
. **Cessna 402B aircraft**
transport aircraft
. short haul aircraft
. . **Cessna 402B aircraft**
RT ∞ aircraft

Cessna aircraft
GS **Cessna aircraft**
. A-37 aircraft
. Cessna 172 aircraft
. Cessna 205 aircraft
. Cessna 210 aircraft
. Cessna 402B aircraft
. Cessna L-19 aircraft
. T-37 aircraft
RT ∞ aircraft

Cessna L-19 aircraft
GS Cessna aircraft
. **Cessna L-19 aircraft**
light aircraft
. **Cessna L-19 aircraft**
monoplanes
. **Cessna L-19 aircraft**
observation aircraft
. **Cessna L-19 aircraft**
reconnaissance aircraft
. **Cessna L-19 aircraft**
RT ∞ aircraft

cetane
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . **cetane**

cetyl compounds
GS alkyl compounds
. **cetyl compounds**
RT ∞ chemical compounds

Ceylon
USE **Sri Lanka**

CF-104 aircraft
USE **Canadair aircraft**
F-104 aircraft

CF-700 engine
GS engines

. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **CF-700 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **CF-700 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **CF-700 engine**
RT vertical takeoff aircraft

CFCs
USE **chlorofluorocarbons**

CFD
USE **charge flow devices**

CFRP
USE **carbon fiber reinforced plastics**

CH (methylidyne)
USE **methylidyne**

CH-3 helicopter
GS passenger aircraft
. **CH-3 helicopter**
Sikorsky aircraft
. **CH-3 helicopter**
transport aircraft
. **CH-3 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **CH-3 helicopter**
. . . rigid rotor helicopters
. . . . **CH-3 helicopter**
RT S-61 helicopter

CH-21 helicopter
UF *H-21 helicopter*
Shawnee helicopter
Workhorse helicopter
GS Boeing aircraft
. **CH-21 helicopter**
transport aircraft
. cargo aircraft
. . **CH-21 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **CH-21 helicopter**

CH-34 helicopter
UF *Choctaw helicopter*
H-34 helicopter
GS Sikorsky aircraft
. **CH-34 helicopter**
transport aircraft
. **CH-34 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **CH-34 helicopter**
RT S-58 helicopter

CH-46 helicopter
UF *CH-113 helicopter*
HRB-1 helicopter
Sea Knight helicopter
Voyageur helicopter
GS Boeing aircraft
. **CH-46 helicopter**
passenger aircraft
. **CH-46 helicopter**
transport aircraft
. **CH-46 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **CH-46 helicopter**
. . . tandem rotor helicopters
. . . . **CH-46 helicopter**

CH-47 helicopter
UF *Chinook helicopter*
HC-1 helicopter
GS Boeing aircraft
. **CH-47 helicopter**
passenger aircraft
. **CH-47 helicopter**
transport aircraft
. **CH-47 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **CH-47 helicopter**
. . . tandem rotor helicopters
. . . . **CH-47 helicopter**

CH-53 helicopter
USE **H-53 helicopter**

CH-54 helicopter
UF *S-64 helicopter*
Sikorsky S-64 helicopter
Skycrane helicopter
GS passenger aircraft
. **CH-54 helicopter**
Sikorsky aircraft
. **CH-54 helicopter**
transport aircraft
. **CH-54 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **CH-54 helicopter**

CH-62 helicopter
GS Boeing aircraft
. **CH-62 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . heavy lift helicopters
. . . . **CH-62 helicopter**
. . . military helicopters
. . . . **CH-62 helicopter**
RT ∞ military aircraft

CH-113 helicopter
USE **CH-46 helicopter**

Chad
GS nations
. **Chad**
RT Africa

chaff
GS countermeasures
. electronic countermeasures
. . **chaff**
RT deception
electronic warfare
radar echoes

chains
SN (EXCLUDES CHEMICAL BONDS AND NUCLEAR REACTIONS)
RT ∞ barriers
cables (ropes)
fasteners
∞ links
molecular chains

chairs
USE **seats**

chalcogenides
GS **chalcogenides**
. oxides
. . alkoxides
. . anhydrides
. . . peroxides
. . . . inorganic peroxides
. . . . . hydrogen peroxide
. . . . organic peroxides
. . . . potassium peroxides
. . . . sodium peroxides
. . boron oxides
. . brucite
. . carbon monoxide
. . carbon suboxides
. . chlorine oxides
. . dioxides
. . . carbon dioxide
. . . flint
. . . hydrogen peroxide
. . . silicon dioxide
. . . . quartz
. . . . . coesite
. . . . . stishovite
. . . sulfur dioxides
. . germanium oxides
. . heavy water
. . indium oxides
. . metal oxides
. . . alkaline earth oxides
. . . . barium oxides
. . . . beryllium oxides
. . . . . alexandrite
. . . . calcium oxides
. . . . . akermanite
. . . . magnesium oxides
. . . . . akermanite
. . . . . periclase
. . . aluminum oxides
. . . . alexandrite
. . . . sapphire
. . . bismuth oxides
. . . cerium oxides
. . . cesium oxides
. . . chromium oxides
. . . cobalt oxides
. . . copper oxides
. . . gallium oxides
. . . hafnium oxides
. . . iron oxides
. . . . hematite
. . . . ilmenite
. . . . magnetite
. . . lanthanum oxides
. . . lead oxides
. . . lithium oxides
. . . manganese oxides
. . . . Hopcalite (trademark)
. . . mercury oxides
. . . mixed oxides
. . . . BSCCO superconductors
. . . . YBCO superconductors

. . . molybdenum oxides
. . . nickel oxides
. . . niobium oxides
. . . platinum oxides
. . . plutonium oxides
. . . potassium oxides
. . . scandium oxides
. . . silver oxides
. . . sodium peroxides
. . . strontium oxides
. . . tantalum oxides
. . . thorium oxides
. . . tin oxides
. . . titanium oxides
. . . . anatase
. . . . ilmenite
. . . . rutile
. . . tungsten oxides
. . . . scheelite
. . . uranium oxides
. . . vanadium oxides
. . . yttrium oxides
. . . zinc oxides
. . . zirconium oxides
. . . . yttria–stabilized zirconia
. . nitrogen oxides
. . . nitric oxide
. . . nitrogen dioxide
. . . nitrogen tetroxide
. . . nitrous oxides
. . phosphorus oxides
. . pyroxenes
. . . enstatite
. . selenium oxides
. . silicon oxides
. . . muscovite
. . . nepheline
. . . silicon dioxide
. . . . quartz
. . . . . coesite
. . . . . stishovite
. . . spodumene
. . sulfur oxides
. . . sulfur dioxides
. selenides
. . cadmium selenides
. . copper selenides
. . . copper indium selenides
. . gallium selenides
. . indium selenides
. . . copper indium selenides
. . lead selenides
. . zinc selenides
. sulfides
. . disulfides
. . . carbon disulfide
. . inorganic sulfides
. . . barium sulfides
. . . bismuth sulfides
. . . cadmium sulfides
. . . calcium sulfides
. . . copper sulfides
. . . hydrogen sulfide
. . . indium sulfides
. . . lead sulfides
. . . molybdenum sulfides
. . . . molybdenum disulfides
. . . polysulfides
. . . strontium sulfides
. . . zinc sulfides
. . . . wurtzite
. . . . zincblende
. . pyrites
. . pyrrhotite
. . . troilite
. tellurides
. . bismuth tellurides
. . cadmium tellurides
. . indium tellurides
. . lanthanum tellurides
. . lead tellurides
. . mercury tellurides
. . . mercury cadmium tellurides
. . tin tellurides
. . zinc tellurides
RT Group 6A compounds

chalk
GS calcium compounds
. calcium carbonates
. . **chalk**
carbon compounds
. carbonates
. . calcium carbonates
. . . **chalk**
RT gypsum

Challenger (Orbiter)
UF *Space Shuttle Orbiter 099*
GS manned spacecraft
. space shuttles
. . Space Shuttle orbiters
. . . **Challenger (Orbiter)**
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . space shuttles
. . . . Space Shuttle orbiters
. . . . . **Challenger (Orbiter)**
RT Endeavour (orbiter)
Space Shuttle mission 31–B
Space Shuttle mission 31–C
Space Shuttle mission 31–D
Space Shuttle mission 41–B
Space Shuttle mission 41–C
Space Shuttle mission 41–G
Space Shuttle mission 51–B
Space Shuttle mission 51–E
Space Shuttle mission 51–F
Space Shuttle mission 51–L
Space Shuttle mission 61–A
∞ spacecraft

∞ **chambers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT anechoic chambers
arc chambers
bubble chambers
cloud chambers
combustion chambers
cylindrical chambers
flexing
flow chambers
hyperbaric chambers
ionization chambers
plenum chambers
pressure chambers
reverberation chambers
spark chambers
test chambers
thrust chambers
vacuum chambers

Chance–Vought aircraft
RT ∞ aircraft

Chandler motion
USE **polar wandering (geology)**

Chandler wobble
(added September 1992)
SN (EXCLUDES CHANDLER MOTION)
DEF A movement in the Earth's axis of rotation whose period of motion is about 14 months. Used for Eulerian nutation.
UF *Eulerian nutation*
GS nutation
. **Chandler wobble**
RT Earth axis
∞ Earth motion
Earth orientation
Earth rotation
geodynamics
geophysics
polar wandering (geology)

Chandrasekhar equation
GS analysis (mathematics)
. real variables
. . differential equations
. . . **Chandrasekhar equation**
RT electromagnetic absorption
∞ equations

change detection
DEF A process of examining imagery to detect changes on a planetary surface or astronomical body.
GS detection
. **change detection**
RT aerial photography
aerial reconnaissance
Earth Resources Program
image classification
image processing
imagery
land use
multispectral band scanners
multispectral photography
pattern recognition
photointerpretation
radar imagery
remote sensing
scene analysis
side–looking radar
terrain analysis

channel capacity
RT Aloha system
bandwidth
∞ capacity
demand assignment multiple access
frequencies
packet transmission
transmission rate (communications)

channel flow
GS fluid flow
. internal flow
. . **channel flow**
. . . open channel flow
RT annular flow
cavity flow
choked flow
corner flow
dredged materials
ducted flow
flow geometry
fluid injection
incompressible fluids
outlet flow
pipe flow
wall flow

channel multipliers
UF *channeltrons*
GS multipliers

. **channel multipliers**
RT aurora spectroscopy
electron avalanche
microchannel plates
photomultiplier tubes
radiation counters

channel noise
DEF In communications bursts of interruptive pulses caused mainly by contact closures in electromagnetic equipment or by transient voltages in electric cables during transmission of signals or data. Impulsive noise is the frequent cause of transmission errors.
RT Aloha system
background noise
electromagnetic noise
noise spectra
random noise
signal to noise ratios
thermal noise
time division multiple access
trellis coding

channel wings
GS airfoils
. wings
. . **channel wings**
planforms
. wing planforms
. . **channel wings**
RT aerodynamic configurations
aircraft design
aircraft parts
aircraft structures

∞ **channels**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT channels (data transmission)
computer storage devices
dredged materials
ducts
frequencies
media
parallel plates
structural members
telecommunication
throats

channels (data transmission)
UF data busses
RT asynchronous transfer mode
∞ **channels**
∞ **data**
data links
data processing
data transmission
protocol (computers)
single channel per carrier transmission

channeltrons
USE **channel multipliers**

chaos
(added June 1989)
RT attractors (mathematics)
branching (mathematics)
mathematical models
nonlinear systems
period doubling
stochastic processes
strange attractors

chaotic cloud patterns
USE **clouds (meteorology)**

chaparral
GS plants (botany)
. brush (botany)
. . **chaparral**
RT botany
Earth resources
trees (plants)

Chaparral missile
GS missiles
. surface to air missiles
. . **Chaparral missile**
RT space weapons

Chaplygin equation
GS flow equations
. **Chaplygin equation**
RT ∞ equations
hodographs
vector spaces

Chapman shear layer
USE **shear layers**

Chapman–Enskog theory
UF *Enskog–Chapman theory*
GS kinetic theory
. transport theory
. . **Chapman–Enskog theory**
RT Boltzmann transport equation
Burnett equations
distribution functions
flow distribution
monatomic gases
rarefied gas dynamics
temperature gradients
∞ theories
thermal diffusion

Chapman–Ferraro problem
RT atmospheric models
Earth magnetosphere
interplanetary magnetic fields
magnetopause
∞ problems
solar wind

Chapman–Jouget flame
USE **chemical equilibrium**
detonation
flame propagation

character recognition
GS recognition
. pattern recognition
. . **character recognition**
RT artificial intelligence
contrast
∞ detectors
graphology
handwriting
legibility
optical data processing
optical scanners
perception
readers
reading
resolution
scene analysis
∞ sensors
symbols
visibility

characteristic equations
USE **eigenvalues**
eigenvectors

characteristic functions
USE **eigenvalues**
eigenvectors

characteristic method
USE **method of characteristics**

∞ **characteristics**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Specifically, distinguishing qualities, properties, features or capabilities of an entity.
RT aerodynamic characteristics
capacitance–voltage characteristics
dynamic characteristics
flight characteristics
flow characteristics
method of characteristics
nanostructure (characteristics)
polarization characteristics
Segre characteristic
spray characteristics
static aerodynamic characteristics
volt–ampere characteristics

characterization
RT descriptions
examination
representations

characters
USE **symbols**

charcoal
GS **charcoal**
. activated carbon
RT adsorbents
carbon
coke
fuels

charge carriers
GS **charge carriers**
. free electrons
. holes (electron deficiencies)
. majority carriers
. minority carriers
RT carrier injection
carrier lifetime
∞ carriers
electron mobility
hole mobility

charge coupled devices
DEF Semiconductor devices arrayed so that the electric charge at the output of one provides the input stimulus to the next. Use for CCD.
UF *CCD*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . charge transfer devices
. . . . **charge coupled devices**
RT bucket brigade devices
CCD cameras
CCD star tracker
charge injection devices
focal plane devices
ITO (semiconductors)

charge distribution
GS distribution (property)
. **charge distribution**
electrical properties
. **charge distribution**
RT current distribution
electron distribution
electrostatic charge

force distribution
hole distribution (electronics)
ion distribution
mass distribution
neutral atoms
polarization (charge separation)

charge efficiency
DEF The efficiency of electric cell recharging.
GS efficiency
. **charge efficiency**
RT battery chargers
∞ charging
electric batteries
primary batteries
recharging
storage batteries

charge exchange
SN (LIMITED TO COLLISIONAL TRANSFER OF AN ELECTRON FROM A NEUTRAL ATOM OR MOLECULE TO AN ION—EXCLUDES SEMICONDUCTOR AND PHOTOCHEMICAL CHARGE TRANSFER)
DEF The collisional transfer of an electron from a neutral atom or molecule to an ion.
GS exchanging
. **charge exchange**
. . resonance charge exchange
RT electron transfer
ion atom interactions
ion charge
ion production rates
plasma–particle interactions
recoil ions

charge flow devices
DEF Metal oxide semiconductor (MOS) devices used for fire detectors and humidity sensors. Used for CFD.
UF *CFD*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . transistors
. . . . field effect transistors
. . . . . **charge flow devices**
RT integrated circuits
∞ sensors

charge injection devices
UF *CID*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . charge transfer devices
. . . . **charge injection devices**
RT charge coupled devices
electro-optics
imaging techniques
semiconductors (materials)
star trackers

charge separation
USE **polarization (charge separation)**

charge transfer
SN (EXCLUDES COLLISIONAL CHARGE EXCHANGE)
RT carrier injection
charged particles
electron transfer
ion exchanging
ionic reactions
mass transfer
photochemical reactions
polarization (charge separation)
transferring

charge transfer devices
UF *CTD*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **charge transfer devices**
. . . . bucket brigade devices
. . . . charge coupled devices
. . . . charge injection devices
RT ITO (semiconductors)
organic charge transfer salts
tunable filters

charged particles
SN (FOR IONIC PARTICLES SEE IONS)
GS particles
. **charged particles**
. . antiprotons
. . energetic particles
. . . electrons
. . . . conduction electrons
. . . . free electrons
. . . . high energy electrons
. . . . . relativistic electron beams
. . . . hot electrons
. . . . N electrons
. . . . negatrons
. . . . photoelectrons
. . . . pi-electrons
. . . . polarons
. . . . solar electrons
. . . nuclei (nuclear physics)
. . . . alpha particles
. . . . deuterons
. . . . even-even nuclei
. . . . heavy nuclei
. . . . hypernuclei
. . . . odd-even nuclei
. . . . odd-odd nuclei
. . . . tritons
. . . plasmas (physics)
. . . . argon plasma
. . . . beta particles
. . . . boundary layer plasmas
. . . . cold plasmas
. . . . collisional plasmas
. . . . . strongly coupled plasmas
. . . . collisionless plasmas
. . . . cosmic plasma
. . . . cylindrical plasmas
. . . . dense plasmas
. . . . . plasma focus
. . . . . strongly coupled plasmas
. . . . electron plasma
. . . . electron-positron plasmas
. . . . elliptical plasmas
. . . . helium plasma
. . . . high temperature plasmas
. . . . hydrogen plasma
. . . . . deuterium plasma
. . . . laser plasmas
. . . . metallic plasmas
. . . . . cesium plasma
. . . . . uranium plasmas
. . . . microplasmas
. . . . nitrogen plasma
. . . . nonequilibrium plasmas
. . . . nonuniform plasmas
. . . . oxygen plasma
. . . . rarefied plasmas
. . . . relativistic plasmas
. . . . rotating plasmas
. . . . semiconductor plasmas
. . . . space plasmas
. . . . . solar wind
. . . . . stellar winds
. . . . . spherical plasmas
. . . . thermal plasmas
. . . . toroidal plasmas
. . ionized gases
. . . Lorentz gas
. . magnetically trapped particles
. . . radiation belts
. . . . artificial radiation belts
. . . . inner radiation belt
. . . . outer radiation belt
. . . . proton belts
. . partons
. . plasma clouds
. . . magnetic clouds
. . plasma jets
. . . radio jets (astronomy)
. . plasma layers
. . . plasma sheaths
. . plasma slabs
. . positrons
. . protons
. . . recoil protons
. . . solar protons
RT antineutrinos
antiparticles
bosons
charge transfer
corpuscular radiation
Coulomb collisions
Coulomb potential
cyclotron frequency
cyclotron radiation
cyclotron resonance
deuteron irradiation
electron-positron pairs
elementary particles
eta-mesons
gyrofrequency
Helios Project
hyperons
ion charge
kaons
leptons
Lorentz force
meson-nucleon interactions
mesons
muon spin rotation
muons
neutral sheets
neutrons
nonadiabatic theory
∞ nuclei
nucleon-nucleon interactions
nucleons
omega-mesons
particle charging
particle precipitation
particle trajectories
pions
Reissner-Nordstrom solution
rho-mesons
sigma-mesons
single event upsets
trapped particles

∞ **charging**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT battery chargers
charge efficiency
electric charge
electrostatic charge
explosive devices
explosives
filling
injection

magnetic charge density
SCATHA satellite

charm (particle physics)
DEF A quantum number which has been proposed to account for an apparent lack of symmetry in the behavior of hadrons relative to that of leptons, to explain why certain reactions of elementary particles do not occur, and to account for the longevity of the J particle.
RT hadrons
leptons
particle interactions
particle theory
∞ physics
quantum theory
theoretical physics

Charon
DEF Natural satellite of the planet Pluto, discovered and named by Dr. James W. Christy.
GS celestial bodies
. natural satellites
. . Pluto satellites
. . . **Charon**
RT Callisto
Deimos
Earth–Moon system
Europa
Galilean satellites
Ganymede
Iapetus
Io
planetary orbits
Pluto (planet)
solar system
Titan

Charpy impact test
GS impact tests
. **Charpy impact test**
notch tests
. **Charpy impact test**
RT brittleness
drop tests
hardness
∞ materials tests
notch sensitivity

charring
RT ablation
carbonization
combustion
decomposition
fire damage
oxidation
thermal absorption

charts
GS **charts**
. flow charts
. graphs (charts)
. . bond graphs
. . Gompertz curves
. . Mollier diagram
. . Patterson map
. meteorological charts
. nautical charts
RT block diagrams
diagrams
display devices
drawings
graphic arts
maps
navigation aids
nomographs
∞ plots
statistical analysis
statistical tests
visual aids

chassignites
(added August 1971)
DEF Achondritic stony meteorites composed almost entirely (95%) of olivine, with accessory amounts of chromite, and lacking nickel–iron. It resembles terrestrial dunite.
GS celestial bodies
. meteorites
. . stony meteorites
. . . achondrites
. . . . **chassignites**
RT nakhlites
shergottites

chassis
GS frames
. **chassis**
RT automobiles
carriages
∞ headers
struts
supports
undercarriages

Chebyshev approximation
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Chebyshev approximation**
RT series (mathematics)
statistical analysis

checkout
SN (SEQUENCE OF TESTS TO DETERMINE FUNCTIONAL READINESS OF EQUIPMENT)
DEF A sequence of actions taken to test or examine a thing as to its readiness for incorporation into a new phase of use, or for the performance of its intended function. The sequence of steps taken to familiarize a person with the operation of an airplane or other piece of equipment. Used for debugging.
UF *debugging*
RT aircraft maintenance
CEFOAM checkout equipment
certification
cold flow tests
countdown
file maintenance (computers)
inspection
maintenance
performance tests
prefiring tests
program verification (computers)
self tests
space vehicle checkout program
spacecraft maintenance
∞ test equipment
∞ tests

checkout equipment
USE **test equipment**

chelate compounds
USE **chelates**

chelates
UF *chelate compounds*
RT chelation
∞ chemical compounds
organometallic compounds

chelation
RT chelates
chemical reactions

chemical analysis
GS chemical tests
. **chemical analysis**
. . chromatography
. . . gas chromatography
. . . liquid chromatography
. . . paper chromatography
. . . thin layer chromatography
. . electrophotometry
. . gas analysis
. . . ozonometry
. . . Van Slyke method
. . iodimetry
. . Karl Fischer reagent
. . microanalysis
. . neutron activation analysis
. . potentiometric analysis
. . qualitative analysis
. . quantitative analysis
. . . Kjeldahl method
. . . Van Slyke method
. . spectroscopic analysis
. . urinalysis
. . volumetric analysis
RT alkalinity
analytical chemistry
∞ analyzing
assaying
Auger spectroscopy
∞ chemistry
colorimetry
coulometers
density measurement
diffractometers
electron probes
fuel tests
gas spectroscopy
hydrometers
hygrometers
identifying
infrared spectrophotometers
infrared spectroscopy
ion selective electrodes
isotopic labeling
laser spectroscopy
Mars surface samples
mass spectrometers
mass spectroscopy
∞ materials tests
∞ measurement
metallicity
methylene blue
moisture meters
mutagens
nephanalysis
optical measurement
particle tracks
particulate sampling
photometry
physical chemistry
polarimeters
polarography
psychrometers
radiochemistry
reagents
sampling
spectral signatures
spectrometers
spectrophotometers
spectroscopy
∞ tests
thermogravimetry
titrimeters
x ray analysis

chemical attack
GS **chemical attack**
. intergranular corrosion
. transgranular corrosion
RT ∞ attack
corrosion
corrosion prevention
corrosion resistance
corrosion tests
degradation
dissolving
impregnating
oxidation
passivity
pitting
rusting
scale (corrosion)

chemical auxiliary power units
GS auxiliary power sources
. **chemical auxiliary power units**
RT electric batteries
fuel cells
lead acid batteries
magnesium cells

chemical bonds
UF *molecular bonds*
GS **chemical bonds**
. covalent bonds
. hydrogen bonds
RT agglutination
binding energy
bonding
coupled modes
covalence
crystal lattices
ionic crystals
ligands
molecules
monatomic molecules
octets
polyatomic molecules
polywater
saturation (chemistry)
Swan bands
unsaturation (chemistry)
valence

chemical cleaning
GS cleaning
. **chemical cleaning**
. . pickling (metallurgy)
RT descaling
dissolving

chemical clouds
DEF Artificial clouds of chemical compounds released in the ionosphere for observation of dispersion and other characteristics.
GS clouds (meteorology)
. artificial clouds
. . **chemical clouds**
. . . barium ion clouds
RT chemical release modules
CRRES (satellite)
particles
plasma clouds

chemical compatibility
(added September 1995)
GS compatibility
. **chemical compatibility**
RT affinity
liquid rocket propellants
metal matrix composites
propellant tests
stability

chemical composition
GS composition (property)
. **chemical composition**
. . carbon dioxide concentration
. . stellar composition
RT alkalinity
atmospheric composition
atom concentration
body composition (biology)
distribution (property)
gas composition
ionospheric composition
ligands
metallic stars
metallicity
planetary structure
spectral signatures

∞ **chemical compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Distinct substances formed by a union of two or more ingredients in definite proportions by weight.
RT acetyl compounds
actinide series compounds
adducts
∞ alkali metal compounds
∞ alkaline earth compounds
alkyl compounds
allyl compounds
aluminum compounds
ammines
ammonium compounds
antimony compounds
∞ aromatic compounds
arsenic compounds
azo compounds
barium compounds
beryllium compounds
bismuth compounds
boron compounds
boron–epoxy composites
bromine compounds
cadmium compounds
calcium compounds
carbon compounds
carbonyl compounds
cerium compounds
cesium compounds
cetyl compounds
chelates
∞ chemicals
chlorine compounds
chromium compounds
clathrates
cobalt compounds
complex compounds
compound A
∞ compounds
congeners
copper compounds
curium compounds
cyano compounds
cyclic compounds
deuterium compounds
diallyl compounds
dibasic compounds
dibutyl compounds
difluoro compounds
diphenyl compounds
dope
dysprosium compounds
epoxy compounds
erbium compounds
ethyl compounds
ethylene compounds
europium compounds
fluorine compounds
fluorine organic compounds
fluoro compounds
furans
gallium compounds
germanium compounds
Group 1B compounds
Group 2B compounds
Group 3A compounds
Group 3B compounds
Group 4A compounds
Group 4B compounds
Group 5A compounds
Group 5B compounds
Group 6A compounds
Group 6B compounds
Group 7B compounds
Group 8 compounds
hafnium compounds
halocarbons
halogen compounds
heterocyclic compounds
hexyl compounds
hydrazinium compounds
hydrazonium compounds
hydrogen compounds
hydroxyl compounds
indium aluminum arsenides
indium compounds
indium oxides
inorganic compounds
intercalation
iodine compounds
iridium compounds
iron compounds
isopropyl compounds
lanthanum compounds
lead compounds
lead organic compounds
lithium compounds
lutetium compounds
magnesium compounds
manganese compounds
mercury compounds
∞ metal compounds
methoxy systems
methyl compounds
molecules
molybdenum compounds
monatomic molecules
neodymium compounds
neptunium compounds
nickel compounds
niobium compounds
nitro compounds
nitrogen compounds
nitronium compounds
nitroso compounds
organic aluminum compounds
organic boron compounds
organic compounds
organic germanium compounds
organic lithium compounds
organic phosphorus compounds
organic semiconductors
organic silicon compounds
organic sulfur compounds
organic tin compounds
organometallic compounds
osmium compounds
∞ oxygen compounds
oxynitrides
palladium compounds
phosgene

phosphonium compounds
phosphorus compounds
platinum compounds
plutonium compounds
polonium compounds
polystomic molecules
polynuclear organic compounds
polyquinoxalines
potassium compounds
praseodymium compounds
propyl compounds
protactinium compounds
rare earth compounds
∞ rare gas compounds
refractory materials
rhenium compounds
rhodium compounds
rubidium compounds
ruthenium compounds
samarium compounds
scandium compounds
selenium compounds
silicon compounds
silver compounds
sodium compounds
strontium compounds
strontium oxides
styphnates
sulfur compounds
sulfur hexafluoride
tantalum compounds
technetium compounds
tellurium compounds
tetrahydrofuran
thiols
thorium compounds
thulium compounds
tin compounds
titanium compounds
triethyl compounds
trimethyl compounds
trinitro compounds
tropyl compounds
tungsten compounds
uranium compounds
vanadium compounds
vanadyl compounds
Wiswesser notations
xenon compounds
ytterbium compounds
yttrium compounds
zinc compounds
zirconium compounds

chemical defense
DEF All actions and counteractions designed for the protection of personnel and material against offensive chemical agents.
RT civil defense
clothing
drugs
first aid
injuries
masks
neurology
physiological factors
protective clothing
safety devices
warfare

chemical effects
RT biological effects
∞ effects
sterilization effects
temperature effects

chemical elements
GS **chemical elements**
. **actinide series**
. . **actinium**
. . **radium**
. . . **radium isotopes**
. . . . **radium 226**
. . **thorium**
. . . **thorium isotopes**
. . **transuranium elements**
. . . **americium**
. . . . **americium isotopes**
. . . . . **americium 241**
. . . **berkelium**
. . . **californium**
. . . . **californium isotopes**
. . . **curium**
. . . . **curium isotopes**
. . . . . **curium 242**
. . . . . **curium 244**
. . . **einsteinium**
. . . **fermium**
. . . **lawrencium**
. . . **mendelevium**
. . . **neptunium**
. . . . **neptunium isotopes**
. . . **nobelium**
. . . **plutonium**
. . . . **plutonium isotopes**
. . . . . **plutonium 238**
. . . . . **plutonium 239**
. . . . . **plutonium 240**
. . . . . **plutonium 241**
. . . . . **plutonium 244**
. . . **sargenium**
. . **uranium**
. . . **uranium isotopes**
. . . . **uranium 232**
. . . . **uranium 233**
. . . . **uranium 234**
. . . . **uranium 235**
. . . . **uranium 238**
. **alkali metals**
. . **cesium**
. . . **cesium isotopes**
. . . . **cesium 133**
. . . . **cesium 134**
. . . . **cesium 137**
. . . . **cesium 144**
. . **cesium vapor**
. . **francium**
. . **lithium**
. . . **liquid lithium**
. . . **lithium isotopes**
. . **potassium**
. . . **liquid potassium**
. . . **potassium isotopes**
. . . . **potassium 38**
. . . . **potassium 39**
. . . . **potassium 40**
. . **rubidium**
. . . **rubidium isotopes**
. . . . **rubidium 86**
. . **sodium**
. . . **liquid sodium**
. . . **sodium isotopes**
. . . . **sodium 22**
. . . . **sodium 24**
. . . **sodium vapor**
. **alkaline earth metals**
. . **barium isotopes**
. **aluminum**
. . **aluminum isotopes**
. . . **aluminum 26**
. . . **aluminum 27**
. **barium**
. . **barium isotopes**
. **beryllium**
. . **beryllium isotopes**
. . . **beryllium 7**
. . . **beryllium 9**
. . . **beryllium 10**
. **bismuth**
. . **bismuth isotopes**
. **cadmium**
. . **cadmium isotopes**
. **calcium**
. . **calcium isotopes**
. **carbon**
. . **carbon isotopes**
. . . **carbon 12**
. . . **carbon 13**
. . . **carbon 14**
. **chromium**
. . **chromium isotopes**
. **cobalt**
. . **cobalt isotopes**
. . . **cobalt 58**
. . . **cobalt 60**
. **copper**
. . **copper isotopes**
. **gallium**
. . **gallium isotopes**
. **gold**
. . **gold isotopes**
. . . **gold 198**
. **hafnium**
. . **hafnium isotopes**
. **hahnium**
. **halogens**
. . **astatine**
. . **bromine**
. . . **bromine isotopes**
. . **chlorine**
. . **fluorine**
. . . **fluorine isotopes**
. . . **liquid fluorine**
. . **iodine**
. . . **iodine isotopes**
. . . . **iodine 125**
. . . . **iodine 131**
. . . . **iodine 132**
. **heavy elements**
. **hydrogen**
. . **hydrogen isotopes**
. . . **deuterium**
. . . **hydrogen 4**
. . . **metallic hydrogen**
. . . **tritium**
. . **liquid hydrogen**
. **indium**
. **iridium**
. . **iridium isotopes**
. **iron**
. . **iron isotopes**
. . . **iron 57**
. . . **iron 58**
. . . **iron 59**
. **lead (metal)**
. . **lead isotopes**
. **light elements**
. **magnesium**
. . **magnesium isotopes**
. **manganese**
. . **manganese isotopes**
. **mercury (metal)**
. . **mercury isotopes**
. . **mercury vapor**
. **metalloids**
. . **antimony**
. . **antimony isotopes**
. . **arsenic**

- arsenic isotopes
- boron
  - boron isotopes
    - boron 10
- germanium
  - germanium isotopes
- polonium
  - polonium isotopes
    - polonium 208
    - polonium 209
    - polonium 210
- silicon
  - amorphous silicon
  - porous silicon
  - silicon isotopes
- tellurium
  - tellurium isotopes
- molybdenum
- nickel
  - nickel isotopes
- niobium
  - niobium isotopes
    - niobium 95
- nitrogen
  - liquid nitrogen
  - nitrogen isotopes
    - nitrogen 15
    - nitrogen 16
  - solid nitrogen
- nuclides
  - isotopes
    - aluminum isotopes
      - aluminum 26
      - aluminum 27
    - antimony isotopes
    - argon isotopes
    - arsenic isotopes
    - barium isotopes
    - beryllium isotopes
      - beryllium 7
      - beryllium 9
      - beryllium 10
    - bismuth isotopes
    - boron isotopes
      - boron 10
    - bromine isotopes
    - cadmium isotopes
    - calcium isotopes
    - carbon isotopes
      - carbon 12
      - carbon 13
      - carbon 14
    - cerium isotopes
      - cerium 137
      - cerium 144
    - cesium isotopes
      - cesium 133
      - cesium 134
      - cesium 137
      - cesium 144
    - cesium vapor
    - chromium isotopes
    - cobalt isotopes
      - cobalt 58
      - cobalt 60
    - dysprosium isotopes
    - erbium isotopes
    - europium isotopes
    - fluorine isotopes
    - gadolinium isotopes
    - gallium isotopes
    - germanium isotopes
    - gold isotopes
      - gold 198
    - hafnium isotopes
    - helium isotopes
    - holmium isotopes
    - hydrogen isotopes
      - deuterium
      - hydrogen 4
      - metallic hydrogen
      - tritium
    - iodine isotopes
      - iodine 125
      - iodine 131
      - iodine 132
    - iridium isotopes
    - iron isotopes
      - iron 57
      - iron 58
      - iron 59
    - krypton isotopes
      - krypton 85
    - lanthanum isotopes
    - lead isotopes
    - lithium isotopes
    - lutetium
      - lutetium isotopes
    - magnesium isotopes
    - manganese isotopes
    - mercury isotopes
    - molybdenum isotopes
    - neodymium isotopes
    - neon isotopes
    - nickel isotopes
    - niobium isotopes
      - niobium 95
    - nitrogen isotopes
      - nitrogen 15
      - nitrogen 16
    - nobelium isotopes
    - osmium isotopes
    - oxygen isotopes
      - oxygen 17
      - oxygen 18
    - palladium isotopes
    - phosphorus isotopes
      - phosphorus 32
    - platinum isotopes
    - polonium isotopes
      - polonium 208
      - polonium 209
      - polonium 210
    - potassium isotopes
      - potassium 38
      - potassium 39
      - potassium 40
    - praseodymium isotopes
    - promethium isotopes
    - protactinium isotopes
    - radioactive isotopes
      - astatine isotopes
      - beryllium 7
      - beryllium 9
      - beryllium 10
      - carbon 14
      - cerium 137
      - cerium 144
      - cesium 134
      - cesium 137
      - cesium 144
      - cobalt 58
      - cobalt 60
      - copper isotopes
      - gold 198
      - indium isotopes
      - iodine 125
      - iodine 131
      - iodine 132
      - iron 59
      - krypton 85
      - niobium 95
      - nitrogen 16
      - phosphorus 32
      - polonium 208
      - polonium 209
      - polonium 210
      - potassium 38
      - potassium 40
      - rubidium 86
      - sodium 22
      - sodium 24
      - strontium 85
      - strontium 88
      - strontium 89
      - strontium 90
      - transuranium elements
        - americium
          - americium isotopes
            - americium 241
        - berkelium
        - californium
          - californium isotopes
        - curium
          - curium isotopes
            - curium 242
            - curium 244
        - einsteinium
        - fermium
        - lawrencium
        - mendelevium
        - neptunium
          - neptunium isotopes
        - nobelium
        - plutonium
          - plutonium isotopes
            - plutonium 238
            - plutonium 239
            - plutonium 240
            - plutonium 241
            - plutonium 244
        - seaborgium
      - tritium
      - uranium 232
      - uranium 233
      - uranium 238
      - xenon 133
      - xenon 135
      - zirconium 95
    - radium isotopes
      - radium 226
    - radon isotopes
    - rhenium isotopes
    - rhodium isotopes
    - rubidium isotopes
      - rubidium 86
    - ruthenium isotopes
    - samarium isotopes
    - scandium isotopes
    - selenium isotopes
    - silicon isotopes
    - silver isotopes
    - sodium isotopes
      - sodium 22
      - sodium 24
    - strontium isotopes
      - strontium 85
      - strontium 87
      - strontium 89
      - strontium 90
    - sulfur isotopes
    - tantalum isotopes
    - technetium isotopes
    - tellurium
      - tellurium isotopes
    - terbium isotopes
    - thallium isotopes
    - thorium isotopes

. . thulium isotopes
. . tin isotopes
. . titanium isotopes
. . tungsten isotopes
. . uranium isotopes
. . . uranium 232
. . . uranium 233
. . . uranium 234
. . . uranium 235
. . . uranium 238
. . vanadium isotopes
. . xenon isotopes
. . . xenon 129
. . . xenon 133
. . . xenon 135
. . ytterbium isotopes
. . yttrium isotopes
. . zinc isotopes
. . zirconium isotopes
. . . zirconium 95
. osmium
. . osmium isotopes
. oxygen
. . liquid oxygen
. . oxygen isotopes
. . . oxygen 17
. . . oxygen 18
. palladium
. phosphorus
. . phosphorus isotopes
. . . phosphorus 32
. platinum
. . platinum isotopes
. protactinium
. . protactinium isotopes
. rare earth elements
. . cerium
. . . cerium isotopes
. . . . cerium 137
. . . . cerium 144
. . dysprosium
. . . dysprosium isotopes
. . erbium
. . . erbium isotopes
. . europium
. . . europium isotopes
. . gadolinium
. . . gadolinium isotopes
. . holmium
. . . holmium isotopes
. . lanthanum
. . . lanthanum isotopes
. . lutetium
. . . lutetium isotopes
. . neodymium
. . . neodymium isotopes
. . praseodymium
. . . praseodymium isotopes
. . promethium
. . . promethium isotopes
. . samarium
. . . samarium isotopes
. . scandium
. . . scandium isotopes
. . terbium
. . . terbium isotopes
. . thulium
. . . thulium isotopes
. . ytterbium
. . . ytterbium isotopes
. . yttrium
. . . yttrium isotopes
. rare gases
. . argon
. . . argon isotopes
. . helium
. . . helium isotopes
. . . liquid helium
. . . . liquid helium 2
. . krypton
. . . krypton isotopes
. . . . krypton 85
. . neon
. . . liquid neon
. . . neon isotopes
. . radon
. . . radon isotopes
. . xenon
. . . xenon isotopes
. . . . xenon 129
. . . . xenon 133
. . . . xenon 135
. rhenium
. . rhenium isotopes
. rhodium
. . rhodium isotopes
. ruthenium
. . ruthenium isotopes
. rutherfordium
. selenium
. silver
. . silver isotopes
. strontium
. . strontium isotopes
. . . strontium 85
. . . strontium 87
. . . strontium 89
. . . strontium 90
. sulfur
. . sulfur isotopes
. tantalum
. . tantalum isotopes
. technetium
. thallium
. . thallium isotopes
. tin
. . tin isotopes
. titanium
. . titanium isotopes
. tungsten
. vanadium
. . vanadium isotopes
. zinc
. . zinc isotopes
. zirconium
. . zirconium isotopes
. . . zirconium 95
RT atoms
∞ chemicals
∞ elements
ferrous metals
ions
isotopic enrichment
light ions
metals
nonferrous metals
nuclear isobars
plasmas (physics)
trace contaminants

chemical energy
DEF Energy produced or absorbed in the process of a chemical reaction. In any such a reaction, energy losses or gains usually involve only the outermost electrons of the atoms or ions of the system undergoing change; here a chemical bond of some type is established or broken without disrupting the original atomic or ionic identities of the constituents.
GS **chemical energy**
. energy of formation
RT∞ **energy**
free energy
internal energy
kinetic energy
∞ level
molecular energy levels
∞ nuclear energy
potential energy

chemical engineering
RT aerothermochemistry
∞ chemistry
combustion chemistry
cracking (chemical engineering)
diffusion
∞ engineering
fluid flow
furnaces
heat transfer
materials handling
∞ operations
thermochemistry

chemical equilibrium
UF *Chapman–Jouget flame*
chemical shift
GS **chemical equilibrium**
. acid base equilibrium
RT association reactions
buffers (chemistry)
dissociation
∞ equilibrium
heat of dissociation
phase rule
reaction kinetics
thermodynamic equilibrium

chemical evolution
DEF The theory of the creation or production of living matter from nonliving matter.
GS evolution (development)
. **chemical evolution**
RT abiogenesis
biological evolution
∞ evolution
exobiology
life sciences
organic compounds
protein synthesis
protobiology

chemical explosions
GS explosions
. **chemical explosions**
. . gas explosions
. . propellant explosions
RT aerial explosions
combustion
detonable gas mixtures
detonation
explosives
flammable gases
turbulent combustion
underground explosions
underwater explosions

chemical extinguishers
USE **fire extinguishers**

chemical fractionation
GS fractionation
. **chemical fractionation**
RT distillation
refining
∞ separation

chemical fuels
DEF Fuels that depend upon an oxidizer for combustion or for development of thrust, such as

liquid or solid rocket fuel or internal combustion engine fuel; distinguished from nuclear fuel.
GS fuels
. chemical fuels
. . endothermic fuels
. . high energy fuels
. . hydrocarbon fuels
. . . diesel fuels
. . . fossil fuels
. . . . coal
. . . . . anthracite
. . . . . lignite
. . . . . solvent refined coal
. . . . crude oil
. . . . natural gas
. . . . . liquefied natural gas
. . . . peat
. . . gasoline
. . . jet engine fuels
. . . . JP-4 jet fuel
. . . . JP-5 jet fuel
. . . . JP-6 jet fuel
. . . . JP-7 jet fuel
. . . . JP-8 jet fuel
. . . synthane
. . liquid fuels
. . . aircraft fuels
. . . antimisting fuels
. . . automobile fuels
. . . diesel fuels
. . . gasoline
. . . hydrogen fuels
. . . jet engine fuels
. . . . JP-4 jet fuel
. . . . JP-5 jet fuel
. . . . JP-6 jet fuel
. . . . JP-7 jet fuel
. . . . JP-8 jet fuel
. . . kerosene
. . metal fuels
. . synthetic fuels
. . . gasohol (fuel)
. . . synthane
RT clean fuels
explosives
fuel production
gelled propellants
gelled rocket propellants
hybrid propellants
monopropellants
plastic propellants
propellants
pyrotechnics
solid propellants

chemical indicators
RT∞ indicators
methylene blue
phloroglucinol

chemical kinetics
USE **reaction kinetics**

chemical lasers
GS stimulated emission devices
. lasers
. . **chemical lasers**
. . . HCL lasers
. . . . HCL argon lasers
. . . chemical oxygen-iodine lasers
RT argon lasers
carbon dioxide lasers
carbon lasers
carbon monoxide lasers
gas lasers
HCN lasers
HF lasers
infrared lasers
liquid lasers
organic lasers
Q switched lasers
TEA lasers
tube lasers

chemical machining
UF *chemical milling*
GS machining
. **chemical machining**
. . electrochemical machining
RT milling (machining)

chemical milling
USE **chemical machining**

chemical oxygen-iodine lasers
(added August 1997)
UF *COIL (lasers)*
GS stimulated emission devices
. lasers
. . chemical lasers
. . . **chemical oxygen-iodine lasers**
. . iodine lasers
. . . **chemical oxygen-iodine lasers**
RT continuous wave lasers

chemical properties
GS **chemical properties**
. acidity
. salinity
. thermochemical properties
. . heat of combustion
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
RT adsorptivity
∞ high resistance
hygroscopicity
∞ low resistance
moisture content
passivity
∞ physical properties
propellant properties
∞ properties
∞ resistance
thermodynamic properties
toxicity
toxicity and safety hazard

chemical propulsion
UF *chemonuclear propulsion*
GS propulsion
. **chemical propulsion**
. . hybrid propulsion
RT jet propulsion
marine propulsion
spacecraft propulsion
underwater propulsion

chemical reaction control
RT agitation
∞ control
∞ reaction control
temperature control

chemical reactions
UF *flame interaction*
GS **chemical reactions**
. acylation
. . acetylation
. alkylation
. ammonolysis
. association reactions
. atomic recombination
. . oxygen recombination
. carbonization
. carboxylation
. copolymerization
. cracking (chemical engineering)
. . hydrocracking
. . pyrolysis
. decarbonation
. decarboxylation
. defluorination
. dehydrogenation
. deionization
. denitrogenation
. depolymerization
. desulfurizing
. Diels-Alder reactions
. endothermic reactions
. epoxidation
. exothermic reactions
. fermentation
. Friedel-Craft reaction
. glycolysis
. Grignard reactions
. halogenation
. . bromination
. . chlorination
. . fluorination
. hydroboration
. hydrogenolysis
. . hydrocracking
. hydrolysis
. ion recombination
. metal-water reactions
. metathesis
. methanation
. methylation
. Michael reaction
. nitration
. nitriding
. nitrogenation
. nitrolysis
. oxidation
. . electrochemical oxidation
. . photooxidation
. . rusting
. oxidation-reduction reactions
. oxygenation
. phosphorylation
. photochemical reactions
. . photochromism
. . photodecomposition
. . photolysis
. . photooxidation
. . photosynthesis
. . radiolysis
. pyrohydrolysis
. reduction (chemistry)
. . deoxidizing
. . hydrogenation
. Sabatier reaction
. sulfation
. sulfidation
. thermal decomposition
. . pyrolysis
. thermal dissociation
. titration
RT biosynthesis
chelation
combustion chemistry
corrosion
gas-metal interactions
hydration
interstellar chemistry
∞ operations
particle interactions

plasma jet synthesis
polymerization
radiochemical separation
reacting flow
∞ reaction
reaction bonding
reaction kinetics
reactivity
reagents
sodalite
solvation
stoichiometry
surface reactions
∞ synthesis
synthesis (chemistry)
synthetic fuels
thermochemistry

chemical reactors
RT autoclaves
beds (process engineering)
burners
columns (process engineering)
contactors
fluidized bed processors
furnaces
gas generators
∞ gas reactors
reactor design
reactor materials
reactor safety
∞ reactors
synthesizers
tanks (containers)
water cooled reactors

chemical relaxation
USE **molecular relaxation**

chemical release modules
DEF Shuttle launched, free-flying spacecraft containing canisters for injecting chemicals into the upper atmosphere and the measurement of the reactions.
GS modules
. **chemical release modules**
RT chemical clouds
CRRES (satellite)
dispersing

chemical shift
USE **chemical equilibrium**

chemical sterilization
GS cleaning
. sterilization
. . **chemical sterilization**
RT antiseptics
bactericides
ethylene oxide
purification
sewage treatment
spacecraft sterilization

chemical tests
GS **chemical tests**
. chemical analysis
. . chromatography
. . . gas chromatography
. . . liquid chromatography
. . . paper chromatography
. . . thin layer chromatography
. . electrophotometry
. . gas analysis
. . . ozonometry
. . . Van Slyke method
. . iodimetry
. . Karl Fischer reagent
. . microanalysis
. . neutron activation analysis
. . potentiometric analysis
. . qualitative analysis
. . quantitative analysis
. . . Kjeldahl method
. . . Van Slyke method
. . spectroscopic analysis
. . urinalysis
. . volumetric analysis
. salt spray tests
RT corrosion resistance
gas spectroscopy
high temperature tests
inspection
low temperature tests
nondestructive tests
quality control
sampling
staining
∞ tests

chemical vapor deposition
USE **vapor deposition**

chemical vapor infiltration
(added December 1992)
UF *CVI (fabrication)*
GS infiltration
. **chemical vapor infiltration**
RT carbon fibers
ceramic fibers
ceramic matrix composites
composite materials
densification
fiber composites

chemical warfare
GS warfare
. **chemical warfare**
RT biochemistry
physiological factors

chemically reacting flow
USE **reacting flow**

∞ **chemicals**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ chemical compounds
chemical elements

chemiluminescence
DEF Any luminescence produced by chemical action.
GS emission
. light emission
. . luminescence
. . . **chemiluminescence**
RT airglow
phosphorescence

chemisorption
DEF The binding of a liquid or gas on the surface or in the interior of a solid by chemical bonds or forces.
GS sorption
. adsorption
. . **chemisorption**
RT adsorptivity
atomic clusters
gas–metal interactions
hydrogen embrittlement
masking
metal clusters
molecular clusters

∞ **chemistry**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aerothermochemistry
aerothermodynamics
analytical chemistry
atmospheric chemistry
biochemistry
biogeochemistry
chemical analysis
chemical engineering
chemotherapy
combustion chemistry
computational chemistry
cosmochemistry
cryochemistry
electrochemistry
environmental chemistry
geochemistry
hydroxyl radicals
inorganic chemistry
interstellar chemistry
marine chemistry
nuclear chemistry
organic chemistry
photoelectrochemistry
physical chemistry
∞ physical sciences
Physics and Chemistry Experiment in Space
physiochemistry
plasma chemistry
polymer chemistry
precipitation (chemistry)
propellant chemistry
quantum chemistry
radiation chemistry
radiochemistry
reduction (chemistry)
saturation (chemistry)
stereochemistry
stoichiometry
synthesis (chemistry)
thermochemistry
unsaturation (chemistry)
Wiswesser notations

chemonuclear propulsion
USE **chemical propulsion**
nuclear propulsion

chemoreceptors
GS anatomy
. **sense organs**
. . **chemoreceptors**
receptors (physiology)
. **chemoreceptors**
RT carotid sinus body
olfactory perception
taste

chemosphere
DEF The vaguely defined region of the upper atmosphere in which photochemical reactions take place. It is generally considered to include the stratosphere (or the top thereof) and the mesosphere, and sometimes the lower part of the thermosphere.
GS Earth atmosphere
. **chemosphere**
RT biosphere
Earth ionosphere
heterosphere
homosphere
lower atmosphere
mesosphere
middle atmosphere

ozonosphere
plasmasphere
stratosphere
thermosphere
troposphere
upper atmosphere

chemotherapy
UF *drug therapy*
GS therapy
. **chemotherapy**
RT **antiseptics**
∞ chemistry
drugs

Chena River Basin (AK)
GS landforms
. structural basins
. . river basins
. . . **Chena River Basin (AK)**
RT **Alaska**

Chesapeake Bay (US)
GS bays (topographic features)
. **Chesapeake Bay (US)**
RT **estuaries**
Maryland
river basins
sounds (topographic features)
Virginia

chest
GS anatomy
. **chest**
RT thorax
torso

chewing
USE **mastication**

chiasma
GS crossings
. **chiasma**

chickens
GS animals
. vertebrates
. . birds
. . . **chickens**

child device
RT learning
learning theory
training devices

Child-Langmuir law
GS laws
. **Child-Langmuir law**
RT perveance
space charge
thermionic diodes

children
RT females
human beings
males
parents
progeny

Chile
GS nations
. **Chile**
RT European Southern Observatory
South America

chilling
USE **cooling**

chimes
USE **auditory signals**

chimneys
RT buildings
exhaust systems
flues
furnaces
plumes
stacks
vents
waste energy utilization

chimpanzees
GS animals
. vertebrates
. . mammals
. . . primates
. . . . apes
. . . . . **chimpanzees**
RT human beings

chin
GS anatomy
. face (anatomy)
. . **chin**
RT bones
head (anatomy)

China
UF *China (communist) mainland*
Chinese Peoples Republic
GS nations
. **China**
RT **Asia**
Chinese aircraft
Chinese space program
Chinese spacecraft
Hong Kong
Taiwan

China (communist) mainland
USE **China**

Chinese aircraft
RT ∞ aircraft
China

Chinese Peoples Republic
USE **China**

Chinese space program
GS programs
. space programs
. . **Chinese space program**
RT China
∞ research projects
space missions
Taiwan

Chinese spacecraft
DEF Satellites built and launched by the Chinese Peoples Republic.
RT China
∞ spacecraft
Taiwan

chinone
USE **quinones**

Chinook helicopter
USE **CH-47 helicopter**

chipping
RT abrasion
comminution
cutting
flaking
fracturing
fragmentation
pitting
∞ separation
spalling
splitting
wear

chips
RT chips (electronics)
fragments
scrap

chips (electronics)
DEF Integrated microcircuits mounted on substrates and performing significant numbers of functions.
GS **chips (electronics)**
. chips (memory devices)
RT application specific integrated circuits
central processing units
chips
computer design
integrated circuits
large scale integration
microelectronics
microprocessors
RISC processors
systolic arrays
very large scale integration
VHSIC (circuits)

chips (memory devices)
DEF Integrated microcircuit devices used collectively to perform the functions of data storage: accepting, retaining, and emitting bits of data.
GS chips (electronics)
. **chips (memory devices)**
computer components
. **chips (memory devices)**
RT ∞ devices
integrated circuits
memory (computers)
metal-nitride-oxide-semiconductors
semiconductor devices

chiral dynamics
RT chirality
∞ dynamics
group theory
Lagrange multipliers
matrices (mathematics)

chirality
(added August 1994)
GS symmetry
. **chirality**
RT antisymmetry
chiral dynamics
group theory
handedness

Chiron
DEF Minor planet 2060, a solar system asteroid discovered by Charles T. Kowal of Hale Observatories. Used for Minor Planet 2060.
UF *Minor Planet 2060*
GS celestial bodies
. asteroids
. . **Chiron**
RT Apollo asteroids
asteroid belts
meteoroids
planets
solar system
space debris

chironomus flies
GS animals
. invertebrates
. . arthropods

. . . insects
. . . . **chironomus flies**
RT Drosophila
infestation

chirp
DEF An all encompassing term for the various techniques of pulse expansion–pulse compression applied to pulse radar; a technique to expand narrow pulses to wide pulses for transmission, and compress wide received pulses to the original narrow pulse width and wave shape, to gain improvement in signal–to–noise ratio without degradation to range resolution and range discrimination.
GS electromagnetic interference
. radio frequency interference
. . **chirp**
. . . chirp signals

chirp signals
GS electromagnetic interference
. radio frequency interference
. . chirp
. . . **chirp signals**
RT **electromagnetic noise**
∞ **signals**

chitin
SN (A POLYSACCHARIDE WHICH IS THE PRINCIPAL CONSTITUENT OF THE SHELLS OF CRABS AND LOBSTERS, THE SHARDS OF BEETLES, AND IS ALSO FOUND IN CERTAIN FUNGI)
DEF A polysaccharide which is the principal constituent of the shells of crabs and lobsters and of the shards of beetles. It is also found in certain fungi.
GS organic compounds
. carbohydrates
. . polysaccharides
. . . **chitin**
RT gums (substances)
starches

chloral
GS aldehydes
. **chlorals**

chlorates
GS halogen compounds
. chlorine compounds
. . **chlorates**
RT ∞ oxygen compounds
perchlorates

Chlorella
DEF A genus of unicellular green algae to be adapted to converting carbon dioxide into oxygen in a closed ecological system.
GS plants (botany)
. **algae**
. . **Chlorella**
RT aerospace medicine
carbon dioxide
culture techniques
life support systems
oxygen
photosynthesis

chlorides
UF *pentachlorides*
trichlorides
GS halogen compounds
. chlorine compounds
. . **chlorides**
. . . aluminum chlorides
. . . ammonium chlorides
. . . beryllium chlorides
. . . boron chlorides
. . . cadmium chlorides
. . . calcium chlorides
. . . carbon tetrachloride
. . . copper chlorides
. . . dichlorides
. . . germanium chlorides
. . . hydrochlorides
. . . hydrogen chlorides
. . . . hydrochloric acid
. . . iron chlorides
. . . lanthanum chlorides
. . . lead chlorides
. . . lithium chlorides
. . . magnesium chlorides
. . . nitrosyl chlorides
. . . nitroxychlorides
. . . nitryl chlorides
. . . phosgene
. . . potassium chlorides
. . . silicon tetrachloride
. . . silver chlorides
. . . sodium chlorides
. . . sulfur chlorides
. . . tetrachlorides
. . . titanium chlorides
. . . tungsten chlorides
. . . zinc chlorides
. halides
. . **chlorides**
. . . aluminum chlorides
. . . ammonium chlorides
. . . beryllium chlorides
. . . boron chlorides
. . . cadmium chlorides
. . . calcium chlorides
. . . carbon tetrachloride
. . . copper chlorides
. . . dichlorides
. . . germanium chlorides
. . . hydrochlorides
. . . hydrogen chlorides
. . . . hydrochloric acid
. . . iron chlorides
. . . lanthanum chlorides
. . . lead chlorides
. . . lithium chlorides
. . . magnesium chlorides
. . . nitrosyl chlorides
. . . nitroxychlorides
. . . nitryl chlorides
. . . phosgene
. . . potassium chlorides
. . . silicon tetrachloride
. . . silver chlorides
. . . sodium chlorides
. . . sulfur chlorides
. . . tetrachlorides
. . . titanium chlorides
. . . tungsten chlorides
. . . zinc chlorides
RT methyl chloride
polyvinyl chloride
salt beds

chlorination
GS chemical reactions
. halogenation
. . **chlorination**
RT bleaching
hydrometallurgy
pyrometallurgy
water treatment

chlorine
GS chemical elements
. halogens
. . **chlorine**

chlorine compounds
GS halogen compounds
. **chlorine compounds**
. . chlorates
. . chlorides
. . . aluminum chlorides
. . . ammonium chlorides
. . . beryllium chlorides
. . . boron chlorides
. . . cadmium chlorides
. . . calcium chlorides
. . . carbon tetrachloride
. . . copper chlorides
. . . dichlorides
. . . germanium chlorides
. . . hydrochlorides
. . . hydrogen chlorides
. . . . hydrochloric acid
. . . iron chlorides
. . . lanthanum chlorides
. . . lead chlorides
. . . lithium chlorides
. . . magnesium chlorides
. . . nitrosyl chlorides
. . . nitroxychlorides
. . . nitryl chlorides
. . . phosgene
. . . potassium chlorides
. . . silicon tetrachloride
. . . silver chlorides
. . . sodium chlorides
. . . sulfur chlorides
. . . tetrachlorides
. . . titanium chlorides
. . . tungsten chlorides
. . . zinc chlorides
. . chlorine fluorides
. . chlorine oxides
. . chlorocarbons
. . chlorosilanes
. . DDT
. . meclizine
. . perchlorates
. . . aluminum perchlorates
. . . ammonium perchlorates
. . . hydrazine perchlorates
. . . hydrogen perchlorate
. . . hydroxylammonium perchlorates
. . . lithium perchlorates
. . . magnesium perchlorates
. . . nitronium perchlorate
. . . potassium perchlorates
. . trichloroethylene
RT ∞ chemical compounds
halocarbons

chlorine fluorides
GS halogen compounds
. chlorine compounds
. . **chlorine fluorides**
. fluorine compounds
. . fluorides
. . . **chlorine fluorides**
. halides
. . fluorides
. . . **chlorine fluorides**
RT liquid rocket propellants

chlorine oxides
GS chalcogenides
. oxides
. . **chlorine oxides**
halogen compounds
. chlorine compounds
. . **chlorine oxides**

chloroaromatics
GS **chloroaromatics**
. chlorobenzenes
RT ∞ aromatic compounds

chlorobenzenes
GS chloroaromatics
. **chlorobenzenes**
organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . **chlorobenzenes**
. hydrocarbons
. . cyclic hydrocarbons
. . . **chlorobenzenes**
RT benzene

chlorocarbons
DEF All compounds containing chlorine and carbon with or without other elements.
GS carbon compounds
. halocarbons
. . **chlorocarbons**
halogen compounds
. chlorine compounds
. . **chlorocarbons**
. halocarbons
. . **chlorocarbons**
RT chlorofluorocarbons

chloroethylene
GS ethylene compounds
. **chloroethylene**
. . trichloroethylene

chlorofluorocarbons
(added December 1991)
DEF A family of compounds of chlorine, fluorine, and carbon, entirely of industrial origin. CFCs include refrigerants, propellants for spray cans and for blowing plastic-foam insulation, styrofoam packaging, and solvents for cleaning electronic circuit boards.
UF *CFCs*
GS carbon compounds
. halocarbons
. . **chlorofluorocarbons**
halogen compounds
. halocarbons
. . **chlorofluorocarbons**
RT air pollution
chlorocarbons
chlorofluoromethane
contaminants
fluorocarbons
greenhouse effect
ozone depletion
ozonosphere

chlorofluoromethane
GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . fluorine organic compounds
. . . . fluorohydrocarbons
. . . . . **chlorofluoromethane**
organic compounds
. fluorine organic compounds
. . fluorohydrocarbons
. . . **chlorofluoromethane**
. hydrocarbons
. . fluorohydrocarbons
. . . **chlorofluoromethane**
RT air pollution
chlorofluorocarbons
contaminants
methane
ozone depletion

chloroform
GS drugs
. anesthetics
. . **chloroform**
RT anesthesiology

chloroformate
GS esters
. **chloroformate**
formates
. **chloroformate**

chlorophylls
GS magnesium compounds
. **chlorophylls**
organometallic compounds
. **chlorophylls**
pigments
. **chlorophylls**
porphyrins
. **chlorophylls**
RT algae
brown wave effect
cells (biology)
chloroplasts
Coastal Zone Color Scanner
dissolved organic matter
green wave effect
ocean color scanner
photosynthesis
plants (botany)
porphines
skin (anatomy)

chloroplasts
GS organelles
. **chloroplasts**
RT cells (biology)
chlorophylls
cytoplasm
photosynthesis

chloroprene resins
UF *neoprenes*
GS elastomers
. rubber
. . synthetic rubbers
. . . **chloroprene resins**

chlorosilanes
GS halogen compounds
. chlorine compounds
. . **chlorosilanes**
hydrogen compounds
. hydrides
. . silanes
. . . **chlorosilanes**
silicon compounds
. **silanes**
. . **chlorosilanes**

chlorpromazine
GS hydrazines
. **chlorpromazine**

Choctaw helicopter
USE **CH-34 helicopter**

choice
USE **selection**

choked flow
(added July 1992)
GS fluid flow
. **choked flow**
RT channel flow
ducted flow
flow velocity
inlet flow
nozzle flow
orifice flow
pipe flow

chokes
SN (EXCLUDES FUEL SYSTEM AND ELECTRONIC DEVICES)
RT **chokes (restrictions)**
∞ **diffusers**
electric coils
mixing
nozzle inserts
∞ **nozzles**

chokes (fuel systems)
RT carburetors
chokes (restrictions)
fuel systems
orifices
∞ systems

chokes (restrictions)
RT **chokes**
chokes (fuel systems)
closures
constrictions
impedance
∞ nozzles
orifices
throats
valves

cholera
GS **diseases**
. **infectious diseases**
. . **bacterial diseases**
. . . **cholera**
RT **human pathology**
kidney diseases
pathogenesis
pathological effects
physiological effects

Cholesky factorization
DEF A numerical algorithm used to solve linear systems of equations.
GS factorization
. **Cholesky factorization**
RT conjugates
finite element method
iterative solution
real variables

cholesterol
GS organic compounds
. lipids
. . **steroids**
. . . **cholesterol**
RT **arteriosclerosis**
liquid crystals

choline
GS organic compounds
. **choline**
RT vitamins

cholinergic blocking agents
USE **anticholinergics**

cholinergics
GS drugs
. **cholinergics**
. . anticholinergics
RT cyclic AMP

cholinesterase
GS biopolymers
. proteins
. . enzymes
. . . **cholinesterase**

organic compounds
. proteins
. . enzymes
. . . cholinesterase
RT neuromuscular transmission

chondrites
DEF Meteoritic stones characterized by small rounded grains or spherules.
GS celestial bodies
. meteorites
. . stony meteorites
. . . chondrites
. . . . Bruderheim meteorite
. . . . carbonaceous chondrites
. . . . Alais meteorite
. . . . Allende meteorite
. . . . Cold Bokkeveld meteorite
. . . . Ivuna meteorite
. . . . Murchison meteorite
. . . . Murray meteorite
. . . . Orgueil meteorite
. . . . Tonk meteorite
. . . Harleton meteorite
. . . Hvittis chondrite
. . . Okhansk meteorite
. . . Pantar chondrites
. . . Pribram meteorite
RT achondrites
chondrule
tektites

chondrula
RT chondrites
enstatite
meteorites
meteoritic microstructures
mineralogy

choppers (electric)
USE **electric choppers**

chords (geometry)
DEF Straight lines intersecting circles or other curves, or straight lines connecting the ends of arcs. In aeronautics, straight lines intersecting or touching airfoil profiles at two points; specifically, those parts of lines between two points of intersections. Used for aerodynamic chords.
UF *aerodynamic chords*
GS geometry
. Euclidean geometry
. . lines (geometry)
. . . **chords (geometry)**
RT curves (geometry)
geodesic lines
tangential blowing
tangents

choroid membranes
GS anatomy
. sense organs
. . eye (anatomy)
. . . **choroid membranes**
membranes
. **choroid membranes**
RT vision

chorus (dawn phenomenon)
USE **dawn chorus**

chorus phenomenon
USE **dawn chorus**

chromates
UF *dichromates*
GS chromium compounds
. **chromates**
. . potassium chromates
RT∞ oxygen compounds

chromatography
DEF The separation of chemical substances by making use of differences in the rates at which the substances travel through or along a stationary medium.
GS chemical tests
. chemical analysis
. . **chromatography**
. . . gas chromatography
. . . liquid chromatography
. . . paper chromatography
. . . thin layer chromatography
RT adsorption
colorimetry
quantitative analysis
sorption

chrome
USE **chromium**

chromic acid
GS acids
. **chromic acid**
chromium compounds
. **chromic acid**

chromites
GS minerals
. **chromites**
RT chromium
chromium oxides
peridotite
serpentine

chromium
UF *chrome*
GS chemical elements
. **chromium**
. . chromium isotopes
metals
. refractory metals
. . **chromium**
. . . chromium isotopes
. transition metals
. . **chromium**
. . . chromium isotopes
refractory materials
. refractory metals
. . **chromium**
. . . chromium isotopes
RT chromites
strategic materials

chromium alloys
GS alloys
. **chromium alloys**
. . Astroloy (trademark)
. . chromium steels
. . Rene 41
. . Rene 63
. . Rene 77
. . Rene 95
RT heat resistant alloys
Inconel (trademark)
stainless steels
Stellite (trademark)
Waspaloy

chromium borides
GS boron compounds
. borides
. . **chromium borides**
chromium compounds
. **chromium borides**

chromium bromides
GS chromium compounds
. **chromium bromides**
halogen compounds
. bromine compounds
. . bromides
. . . **chromium bromides**
. halides
. . bromides
. . . **chromium bromides**
. . metal halides
. . . **chromium bromides**

chromium carbides
GS carbon compounds
. carbides
. . **chromium carbides**
chromium compounds
. **chromium carbides**

chromium compounds
GS **chromium compounds**
. chromates
. . potassium chromates
. chromic acid
. chromium borides
. chromium bromides
. chromium carbides
. chromium fluorides
. chromium oxides
. sodium chromites
RT∞ chemical compounds
Group 6B compounds
∞ metal compounds

chromium fluorides
GS chromium compounds
. **chromium fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **chromium fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **chromium fluorides**
. . metal halides
. . . metal fluorides
. . . . **chromium fluorides**

chromium isotopes
GS chemical elements
. chromium
. . **chromium isotopes**
. nuclides
. . isotopes
. . . **chromium isotopes**
metals
. refractory metals
. . chromium
. . . **chromium isotopes**
. transition metals
. . chromium
. . . **chromium isotopes**
refractory materials
. refractory metals
. . chromium
. . . **chromium isotopes**

chromium oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **chromium oxides**
chromium compounds

. **chromium oxides**
RT chromites

chromium steels
DEF Steels containing chromium as the main alloying element.
GS **alloys**
. chromium alloys
. . **chromium steels**
. iron alloys
. . **steels**
. . . **chromium steels**
RT ferritic stainless steels

chromophores
(added July 1994)
RT color
dyes
electrochromism
nonlinear optics
optical activity
optical materials
∞ optics
pigments

chromosomes
DEF The self replicating genetic structure of cells containing the cellular DNA that bears in it's nucleotidesequence the linear array of genes.
RT **cells (biology)**
congenital anomalies
cytology
gene expression
genes
genetic code
genetics
mitosis
mutations
∞ nuclei
reproductive systems
tetrad theory

chromosphere
DEF A thin layer of relatively transparent gases above the photosphere of the sun.
GS **environments**
. extraterrestrial environments
. . **stellar atmospheres**
. . . **chromosphere**
RT coronal loops
faculae
photosphere
solar atmosphere
solar corona
solar prominences
solar transition region
spicules
stellar structure
stellar winds

chronaxy
GS time
. reaction time
. . **chronaxy**
RT responses
sensory stimulation
thresholds (perception)

chronic conditions
GS conditions
. **chronic conditions**
RT blood volume
diseases
disorders
health

chronobiology
USE **rhythm (biology)**

chronographs
USE **chronometers**

chronology
UF *age determination*
dating
GS **chronology**
. geochronology
RT time

chronometers
UF *chronographs*
GS measuring instruments
. time measuring instruments
. . clocks
. . . **chronometers**
RT atomic clocks
clock paradox
time measurement
timing devices

chronophotography
UF *time lapse photography*
GS imagery
. photography
. . **chronophotography**
RT black and white photography
motion pictures

chronotrons
USE **pulse rate**
time lag

chugging
USE **combustion stability**

Chukchi Sea
DEF Part of the Arctic Ocean north of the Bering Strait between Asia and North America.
GS **seas**
. **Chukchi Sea**
RT Arctic regions

chutes
UF *slides*
RT conveyors
materials handling

CID
USE **charge injection devices**

cinder cones
USE **cones (volcanoes)**

cinefluorography
USE **motion pictures**
radiography

cinematography
GS imagery
. photography
. . **cinematography**
RT animation
black and white photography
cameras
color photography
infrared photography
motion pictures
stereophotography
streak cameras
video tapes

cineradiography
USE **motion pictures**
radiography

cinespectrographs
RT optical measuring instruments
spectroscopy

cinetheodolites
GS measuring instruments
. optical measuring instruments
. . transits
. . . theodolites
. . . . **cinetheodolites**
optical equipment
. optical measuring instruments
. . transits
. . . theodolites
. . . . **cinetheodolites**
RT photographic tracking
satellite tracking

circadian rhythms
DEF Regular changes in physiological function occurring in approximately 24 hour cycles. Used for *diurnal rhythms*.
UF *diurnal rhythms*
GS rhythm (biology)
. **circadian rhythms**
RT activity cycles (biology)

circles (geometry)
GS geometry
. Euclidean geometry
. . **circles (geometry)**
. . . great circles
RT circumferences
curves (geometry)
ellipses
radii
∞ rings
∞ sectors
segments
spheres

circuit boards
RT electronic packaging
printed circuits

circuit breakers
UF *breakers (electric)*
RT disconnect devices
dropouts
electric relays
∞ fuses
switches
switching circuits

circuit diagrams
UF *schematics*
GS diagrams
. **circuit diagrams**
RT engineering drawings
layouts
photomasks

circuit protection
GS protection
. **circuit protection**
RT capacitors
circuits
current regulators
electric fuses
electric power transmission
electric reactors
electrical faults
electrical grounding
electrical insulation
expulsion
∞ fuses
overvoltage
phase control
phase error
sneak circuit analysis
suppressors
surges

transformers
transmission circuits
transmission lines
voltage regulators

circuit reliability
GS reliability
. circuit reliability
RT aircraft reliability
component reliability
drift (instrumentation)
quality control
sneak circuit analysis
spacecraft reliability

circuits
DEF Networks providing one or more closed paths. Used for electric circuits, exploding conductor circuits, shunts, and subcircuits.
UF *electric circuits*
exploding conductor circuits
shunts
subcircuits
GS **circuits**
. adding circuits
. analog circuits
. autodynes
. bistable circuits
. . flip-flops
. cancellation circuits
. clamping circuits
. coincidence circuits
. comparator circuits
. conjugated circuits
. counting circuits
. . scalers
. coupling circuits
. delay circuits
. . phantastrons
. digital electronics
. . logic circuits
. . . threshold gates
. digital integrators
. diplexers
. discriminators
. . Fraunhofer line discriminators
. . frequency discriminators
. echo suppressors
. electric bridges
. . wire bridge circuits
. . . Wheatstone bridges
. equivalent circuits
. feedback circuits
. fire control circuits
. fluidic circuits
. gates (circuits)
. . threshold gates
. hybrid circuits
. integrated circuits
. . application specific integrated circuits
. . DTL integrated circuits
. . encapsulated microcircuits
. . large scale integration
. . linear integrated circuits
. . medium scale integration
. . TTL integrated circuits
. . very large scale integration
. . VHSIC (circuits)
. iterative networks
. LC circuits
. limiter circuits
. . clipper circuits
. linear circuits
. magnetic circuits
. matrices (circuits)
. microwave circuits
. mixing circuits
. multivibrators
. . flip-flops
. . monostable multivibrators
. negative resistance circuits
. Ohms law
. phase detectors
. . synchroscopes
. phase shift circuits
. . circulators (phase shift circuits)
. pneumatic circuits
. power supply circuits
. printed circuits
. RC circuits
. RL circuits
. . RLC circuits
. squelch circuits
. sweep circuits
. switching circuits
. . fluid switching elements
. transistor circuits
. transmission circuits
. trigger circuits
. varactor diode circuits
RT amplifiers
breadboard models
capacitors
∞ cascades
circuit protection
differentiators
duality principle
duplexers
electric connectors
electric current
∞ electric equipment
electric filters
electric motors
electric power transmission
electric wire
electrical grounding
electromechanics
electron tubes
flat conductors
inductors
integrators
Kirchhoff law of networks
loops
microelectronics
microminiaturization
microstrip devices
miniature electronic equipment
miniaturization
modules
network analysis
oscillators
selectors
short circuits
signal generators
solid state devices
solions
∞ strip
transmission lines
trees (mathematics)
underground transmission lines
voltage controlled oscillators
wiring

circular cones
GS **cones**
. circular cones
RT half cones
nose cones

circular cylinders
RT ∞ cylinders
cylindrical bodies
cylindrical shells
elliptical cylinders

circular orbits
GS orbits
. circular orbits
. . stationary orbits
RT Earth orbits
eccentric orbits
elliptical orbits
equatorial orbits
geosynchronous orbits
lunar orbits
orbital mechanics
planetary orbits
polar orbits
quadratures
satellite orbits
solar orbits
spacecraft orbits
twenty-four hour orbits

circular plates
GS structural members
. plates (structural members)
. . circular plates
RT annular plates
disks (shapes)
end plates
flat plates

circular polarization
GS polarization (waves)
. circular polarization
RT elliptical polarization
optical polarization

circular shells
GS shells (structural forms)
. circular shells
RT cylindrical shells
hemispherical shells
metal shells
spherical shells

circular tubes
RT cylindrical shells
duct geometry
pipes (tubes)
∞ tubes

circular waveguides
DEF Small hollow tubes that are designed to transmit a specific wavelength along the length of the tube.
GS waveguides
. circular waveguides
RT microwave transmission
propagation modes

circulation
DEF The flow or motion of a fluid in or through a given area or volume. A precise measure of the average flow of a fluid along a given closed curve. Used for recirculation.
UF *recirculation*
GS **circulation**
. atmospheric circulation
. . zonal flow (meteorology)
. blood circulation
. . brain circulation
. . coronary circulation
. . intracranial circulation
. . ocular circulation
. . peripheral circulation
. . pulmonary circulation
. water circulation
. . water currents
. . . ocean currents

. . . . coastal currents
. . . . el Nino
. . . . Gulf Stream
. . . . Lomonosov current
RT blowing
circulation distribution
congestion
∞ currents
delivery
diffusion
dispersing
∞ flow
fluid flow
purging
rotation

circulation control airfoils
DEF Airfoils in which a high lift capability is produced by supercirculation where control of the stagnation points by the jet sheet produces high lift coefficients.
GS airfoils
. **circulation control airfoils**
. . circulation control rotors
RT blowing
boundary layer control
Coanda effect
∞ control
lift augmentation
short takeoff aircraft
tangential blowing
under surface blowing
upper surface blowing

circulation control rotors
DEF Rotors that provide STOL capability on high performance aircraft by means of tangential blowing over a rounded trailing edge and mass flow characteristic of turbine engine bleed.
GS airfoils
. circulation control airfoils
. . **circulation control rotors**
. **wings**
. . rotary wings
. . . **circulation control rotors**
rotating bodies
. rotors
. . rotary wings
. . . **circulation control rotors**
RT ∞ control
vertical takeoff aircraft
x wing rotors

circulation distribution
DEF The line integral of the velocity component around a curve along the closed contour.
RT atmospheric circulation
circulation
∞ distribution
velocity distribution

circulators (phase shift circuits)
GS circuits
. **phase shift circuits**
. . **circulators (phase shift circuits)**
RT cavity resonators
delay circuits
duplexers
Faraday effect
Hall generators
limiter circuits

circulatory system
GS anatomy
. **circulatory system**
. . cardiovascular system
. . . blood vessels
. . . . arteries
. . . . . aorta
. . . . capillaries (anatomy)
. . . . . glomerulus
. . . . veins
. . . heart
. . . . cardiac auricles
. . . . cardiac ventricles
. . . . epicardium
. . . . myocardium
RT arteriosclerosis
artificial cardiac pacemaker
blood circulation
blood pumps
carotid sinus body
carotid sinus reflex
exercise physiology
hypervolemia
organs

circumferences
GS geometry
. Euclidean geometry
. . analytic geometry
. . . **circumferences**
RT boundaries
circles (geometry)
diameters
radii

circumlunar communication
GS telecommunication
. space communication
. . lunar communication
. . . **circumlunar communication**
RT interplanetary communication
radar
radio communication
satellite communication
spacecraft communication
unified S band

circumlunar trajectories
GS trajectories
. round trip trajectories
. . **circumlunar trajectories**
. spacecraft trajectories
. . lunar trajectories
. . . **circumlunar trajectories**
RT Earth orbits
Earth-Moon trajectories
lunar flight
lunar orbits
moon-Earth trajectories
reentry trajectories
rendezvous trajectories
transfer orbits

circumpolar westerlies
GS wind (meteorology)
. **circumpolar westerlies**
RT atmospheric circulation
jet streams (meteorology)
winds aloft
zonal flow (meteorology)

circumsolar radiation
DEF Radiation from small angle scattering of direct sunlight from atmospheric aerosols with dimensions on the order of or greater than the wavelength of light.
GS extraterrestrial radiation
. solar radiation
. . **circumsolar radiation**
RT atmospheric scattering
light scattering
∞ radiation
scattering
sunlight

circumsolar telescopes
DEF Optical instruments for measuring the circumsolar radiation for application to solar energy systems. Mirrors and lenses are utilized for incident sunlight concentration.
GS telescopes
. **circumsolar telescopes**
RT lenses
measuring instruments
mirrors
optical equipment
radiation pyrometers
solar energy
solar radiation

circumstellar matter
USE **stellar envelopes**

cirques (landforms)
GS landforms
. structural basins
. . **cirques (landforms)**
RT glaciers
ice
mountains
snow

cirrocumulus clouds
DEF Cirriform clouds appearing as a thin sheet of small white puffs resembling flakes or patches of cotton without shadows.
GS clouds (meteorology)
. **cirrocumulus clouds**
RT atmospheric moisture
cirrostratus clouds
climatology
cloud cover
fog
meteorology
nephanalysis
precipitation (meteorology)
thunderstorms
weather

cirrostratus clouds
DEF Cirriform clouds appearing as a whitish veil. Usually fibrous, sometimes smooth, they often produce halo phenomena. This form may totally cover the sky.
GS clouds (meteorology)
. **cirrostratus clouds**
RT atmospheric moisture
cirrocumulus clouds
climatology
cloud cover
fog
meteorology
nephanalysis
precipitation (meteorology)
thunderstorms
weather

cirrus clouds
DEF Cirriform clouds in the form of thin, white featherlike shapes in patches or narrow bands. They have a fibrous and/or silky sheen. Large ice crystals often trail downward a considerable vertical distance in fibrous, slanted, or irregularly curved wisps called mares' tails.
GS clouds (meteorology)
. **cirrus clouds**

cirrus shields
GS clouds (meteorology)
. **cirrus shields**
RT climatology

meteorology
weather forecasting

CIS
USE **Commonwealth of Independent States**

cislunar space
DEF Of or pertaining to phenomena, projects, or activity in the space between the Earth and the moon, or between the Earth and the moon's orbit.
GS environments
. aerospace environments
. . **cislunar space**
. extraterrestrial environments
. . **cislunar space**
RT deep space
Earth–Moon trajectories
interplanetary space
lunar flight
lunar orbits
∞ space

cities
UF *metropolitan areas*
urban areas
GS **cities**
. **Atlanta (GA)**
. Cedar Rapids (IA)
. Houston (TX)
. Manitou (CO)
. Moscow
. New Haven (CT)
. New York City (NY)
. Phoenix (AZ)
. Pontiac (MI)
. San Francisco (CA)
. Vatican City
RT anthropology
communities
heat islands
industrial areas
inhabitants
megalopolises
nations
residential areas
sociology
suburban areas
urban development
urban planning
urban research

citrates
RT citric acid
esters

citric acid
GS acids
. carboxylic acids
. . **citric acid**
organic compounds
. carbohydrates
. . **citric acid**
. carboxylic acids
. . **citric acid**
RT citrates

Citrus trees
GS plants (botany)
. trees (plants)
. . **citrus trees**
RT agriculture
blight
botany
crop growth
crop vigor
∞ crops
curing
∞ food
irrigation
orchards
seeds

civil aviation
UF *commercial aviation*
RT ∞ aeronautics
air law
airline operations
aviation meteorology
commercial aircraft
general aviation aircraft
passenger aircraft

civil defense
RT air defense
antimissile defense
chemical defense
∞ defense
defense program
evacuating (transportation)
nuclear explosions
nuclear warfare
protection
Sentinel system
shelters
survival
warning
warning systems

CL-41 aircraft
UF *Canadair CL-41 aircraft*
CT-114 aircraft
Tutor aircraft
GS attack aircraft
. **CL-41 aircraft**
Canadair aircraft
. **CL-41 aircraft**
General Dynamics aircraft
. **CL-41 aircraft**
jet aircraft
. **CL-41 aircraft**
monoplanes
. **CL-41 aircraft**
RT ∞ aircraft

CL-44 aircraft
UF *Canadair CL-44 aircraft*
CC-106 aircraft
Yukon aircraft
GS Canadair aircraft
. **CL-44 aircraft**
General Dynamics aircraft
. **CL-44 aircraft**
jet aircraft
. turboprop aircraft
. . **CL-44 aircraft**
monoplanes
. **CL-44 aircraft**
transport aircraft
. cargo aircraft
. . **CL-44 aircraft**
RT ∞ aircraft

CL-595 helicopter
USE **XH-51 helicopter**

CL-600 challenger aircraft
DEF Canadair turbofan aircraft with supercritical wings.
GS Canadair aircraft
. **CL-600 challenger aircraft**
general aviation aircraft
. **CL-600 challenger aircraft**
jet aircraft
. turbofan aircraft
. . **CL-600 challenger aircraft**
RT ∞ aircraft
∞ military aircraft
supercritical wings

CL-823 aircraft
UF *Lockheed CL-823 aircraft*
GS jet aircraft
. **CL-823 aircraft**
Lockheed aircraft
. **CL-823 aircraft**
supersonic aircraft
. supersonic transports
. . **CL-823 aircraft**
transport aircraft
. **CL-823 aircraft**
RT ∞ aircraft

CL-84 aircraft
UF *Canadair CL-84 aircraft*
GS antisubmarine warfare aircraft
. **CL-84 aircraft**
Canadair aircraft
. **CL-84 aircraft**
General Dynamics aircraft
. **CL-84 aircraft**
jet aircraft
. turboprop aircraft
. . **CL-84 aircraft**
tilt wing aircraft
. **CL-84 aircraft**
transport aircraft
. **CL-84 aircraft**
V/STOL aircraft
. **CL-84 aircraft**
RT ∞ aircraft

cladding
DEF A coating placed on the surface of a material and usually bonded to the material.
GS metal working
. **cladding**
RT anodic stripping
cathodic coatings
cold working
composite materials
explosive welding
extruding
laminates
metal coatings
metallizing
plating
protective coatings

claiming
RT ∞ law
patents
preempting

clamping circuits
DEF Circuits which maintain either extremity of a waveform at a prescribed potential. Networks for adjusting the absolute voltage level of waveforms.
GS circuits
. **clamping circuits**
RT limiter circuits
power limiters

clamps
RT ∞ bands
clips
fasteners
holders
jigs
mechanical devices
sealing
straps

clarity
RT atmospheric optics
electromagnetic properties
haze
opacity
optical properties
purity
∞ sharpness
solubility
transparence
turbidity

Clark Y airfoil
USE **airfoil profiles**

classes
RT categories
∞ groups
∞ sections

Classic aircraft
USE **IL-62 aircraft**

classical mechanics
GS **classical mechanics**
. space mechanics
. . astrodynamics
. . celestial mechanics
. . orbital mechanics
. . . Kepler laws
. . . minimum variance orbit determination
RT angular momentum
continuum mechanics
equations of motion
Euler-Lagrange equation
Hamiltonian functions
Lagrange coordinates
Maxwell bodies
∞ mechanics (physics)
momentum
phase-space integral
Poisson equation
quaternions
statistical mechanics

classifications
GS **classifications**
. hierarchies
. . BBGKY hierarchy
. . dichotomies
. indexes (documentation)
. . KWIC indexes
. . Wiswesser notations
. subjects
RT astronomical catalogs
∞ breakdown
∞ classifying
cluster analysis
congeners
image classification
taxonomy

classifiers
GS **separators**
. **classifiers**
. . sizing screens
. . thickeners (equipment)
RT centrifuges
concentrating
concentrators
flotation
∞ separation
shakers
size determination
size separation
spirals (concentrators)

∞ **classifying**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF sorting
RT classifications
concentrators
discriminant analysis (statistics)
evaluation
image classification
security
selection
size separation
sorting algorithms
taxonomy

clathrates
RT ∞ chemical compounds
crystal structure
crystals
inclusions

clays
GS **clays**
. illite
. kaolinite
. montmorillonite
. vermiculite
RT alluvium
boreholes
bricks
ceramics
colloids
fans (landforms)
grout
masonry
mining
molding materials
mud
refractory materials
rocks
sedimentary rocks
sediments
shales
sizing materials
soils
strip mining

clean energy
RT air pollution
environment pollution
environmental engineering
geothermal energy conversion
solar energy
tidepower
water pollution
waterwave energy
windpower utilization

clean fuels
DEF Energy sources from which pollutants and other impurities have been removed by refining, purification, and other means, to produce fuels less conducive to pollution.
GS **fuels**
. **clean fuels**
. . fuel oils
RT **beneficiation**
chemical fuels
hydrocarbon fuels
pollution
refining
synthetic fuels

clean rooms
DEF Areas in which the temperature, humidity, and the airborne particulate contamination are controlled as required.
GS rooms
. **clean rooms**
RT **assembling**
cleanliness
controlled atmospheres
environmental control

cleaners
GS **cleaners**
. air filters
RT ∞ absorbers
absorbers (equipment)
absorbers (materials)
cleaning
cleanliness
separators
ultrasonic cleaning
washers (cleaners)

cleaning
GS **cleaning**
. chemical cleaning
. . picking (metallurgy)
. housekeeping (spacecraft)
. sterilization
. . chemical sterilization
. . spacecraft sterilization
. ultrasonic cleaning
. washing
. . bathing
RT abrasion
antifouling
antiseptics
bleaching
cleaners
cleanliness
clearing
corrosion prevention
decontamination
descaling
dissolving
dust
flushing
metal finishing
metal polishing
paint removal
polishing
purification
∞ reduction
refining
scarfing
scavenging
scrubbers
∞ separation
surface finishing
trichloroethylene
waste water

cleanliness
GS **cleanliness**
. housekeeping (spacecraft)
RT clean rooms
cleaners
cleaning
hygiene
oral hygiene

clear air turbulence
GS turbulence
. atmospheric turbulence
. . clear air turbulence
RT aviation meteorology
gusts

jet streams (meteorology)
thermal instability
turbulent diffusion
wind shear

clearances
RT adjusting
alignment
allowances
datum (elevation)
spacing
tightness
tolerances (mechanics)

clearing
RT cleaning
purging
removal

clearings (openings)
UF **slashes**
RT deforestation
firebreaks
forests
trees (plants)

cleavage
UF scission
RT brittle materials
brittleness

Clebsch-Gordan coefficients
GS coefficients
. **Clebsch-Gordan coefficients**
RT angular momentum
coupling

Clementine spacecraft
(added May 1997)
DEF A spacecraft launched in January 1994 as part of a joint NASA/DoD-BMDO (Ballistic Missile Defense Organization) mission to space-qualify several lightweight electronic instruments and systems (including an ultraviolet/visible CCD camera, a near infrared and long-wavelength infrared camera, and a combined high-resolution CCD camera and laser ranging system). The Clementine mission also provided the first complete systematic surface mapping of the moon from the ultraviolet to near infrared spectral regions. A software malfunction in May of 1994 precluded a planned flyby of the asteroid Geographos.+
RT asteroid missions
CCD cameras
flyby missions
lunar exploration
lunar maps
lunar spacecraft
lunar surface
∞ **spacecraft**

client server systems
(added May 1996)
GS networks
. computer networks
. . **client server systems**
RT architecture (computers)
computer systems design
distributed processing
intranets
on-line systems

cliffs
UF *bluffs (landforms)*
RT canyons
escarpments
fiords
landslides
ledges
∞ **shelves**
slopes
topography

climate
UF macroclimate
RT climate change
climatology
long term effects
meteorology
paleoclimatology
Southern oscillation
weather

climate change
RT air pollution
atmospheric composition
atmospheric temperature
carbon dioxide concentration
climate
climate models
climatology
global warming
greenhouse effect
man environment interactions
Mission to Planet Earth
palaeoclimatology
stratospheric warming

climate models
(added March 1995)
GS models
. **climate models**
RT atmospheric models
climate change
environment models
hydrology models
ocean models

climatology
UF *Milankovitch theory*
GS **climatology**
. agroclimatology
. hydroclimatology
. microclimatology
. paleoclimatology
RT Antarctic regions
anvil clouds
Arctic regions
atmospheric circulation
Atmospheric General Circulation Models
cap clouds
cirrocumulus clouds
cirrostratus clouds
cirrus shields
climate
climate change
cloud cover
cloud dispersal
clouds (meteorology)
dendrochronology
desertline
deserts
environmental chemistry
environmental engineering
FIRE (climatology)
fog dispersal
geography
hailstorms
heat islands
humidity
hurricanes
hydrology
ISCCP Project
lightning suppression
meteorology
middle atmosphere
periodic variations
phenology
polar meteorology
polar regions
precipitation (meteorology)
primitive equations
rainmaking
sea breeze
seasons
snowstorms
solar radiation
storm enhancement
storm suppression
storms
storms (meteorology)
sunlight
teleconnections (meteorology)
temperate regions
temperature
tropical regions
weather
wind (meteorology)
zonal flow (meteorology)

climbing flight
GS ascent
. **climbing flight**
RT ascent trajectories
coasting flight
∞ **flight**
flight paths
horizontal flight
parabolic flight
rocket flight
soaring
takeoff
turning flight
vertical flight

clinical medicine
GS medical science
. **clinical medicine**
RT anesthesiology
bed rest
blood volume
case histories
diagnosis
examination
healing
health
human beings
∞ medicine
∞ operations
sports medicine
surgery
transplantation
∞ **treatment**

clipper circuits
GS circuits
. limiter circuits
. . **clipper circuits**
RT comparator circuits
power limiters

clips
RT anchors (fasteners)
∞ bands
clamps
couplings
fasteners
holders
mechanical devices

clock paradox
GS time measurement
. **clock paradox**
RT atomic clocks
chronometers
time signals
timing devices

clocks
UF *watches*
GS measuring instruments
. time measuring instruments
. . **clocks**
. . . atomic clocks
. . . autonomous spacecraft clocks
. . . chronometers
RT time measurement
timing devices

clogging
USE **plugging**

cloning (biology)
(added August 1997)
RT biotechnology
cells (biology)
culture techniques
deoxyribonucleic acid
gene expression
genes
genetic code
genetic engineering
genetics
reproduction (biology)

close packed lattices
GS crystal lattices
. **close packed lattices**
RT body centered cubic lattices
face centered cubic lattices

closed basins
USE **structural basins**

closed circuit television
GS communication equipment
. **closed circuit television**
telecommunication
. **closed circuit television**
television systems
. **closed circuit television**
RT cable television
color television
educational television
stereotelevision
television cameras
television receivers
television transmission
wireless communication

closed cycles
SN (EXCLUDES CLOSED LOOP CONTROL SYSTEMS)
RT control theory
cooling systems
electric generators
gas turbines
loops
nuclear reactors
plasma generators
thermal cycling tests
thermodynamic cycles

closed ecological systems
DEF Systems that provide for the maintenance of life in an isolated living chamber through complete reutilization of the material available, in particular, by means of a cycle wherein exhaled carbon dioxide, urine, and other waste matter are converted chemically or by photosynthesis into oxygen, water, and food. Used for bioregenerative life support systems.
UF *bioregenerative life support systems*
GS support systems
. life support systems
. . **closed ecological systems**
RT aerospace medicine
bioastronautics
ecology
ecosystems
food production (in space)
gnotobiotics
long term effects
oxygen production
space habitats
spacecraft cabin atmospheres
spacecraft environments
survival
∞ systems

closed faults
USE **geological faults**

closed loop systems
USE **feedback control**

closing
RT blocking
plugging
sealing
stopping

Clostridium
GS microorganisms
. bacteria
. . **Clostridium**
. . . Clostridium botulinum
RT bacterial diseases

Clostridium botulinum
GS microorganisms
. bacteria
. . Clostridium
. . . **Clostridium botulinum**
RT bacteriology
pathogens
toxic diseases

closure law
GS laws
. **closure law**
RT field theory (physics)
k–epsilon turbulence model
statistical mechanics
turbulent flow

closures
RT ∞ barriers
blocking
chokes (restrictions)
constrictions
couplings
coverings
enclosures
end plates
fasteners
fittings
∞ gates
joints (junctions)
plugging
plugs
seals (stoppers)
tightness
valves

cloth
USE **fabrics**

clothing
GS **clothing**
. boots (footwear)
. cotton fibers
. coveralls
. flight clothing
. garments
. gloves
. goggles
. protective clothing
. . helmets
. . pressure suits
. . . space suits
. . . . extravehicular mobility units
. . vapor barrier clothing
. shoes
. socks
. suits
. . pressure suits
. . . space suits
. . . . extravehicular mobility units
RT chemical defense
consumables (spacecrew supplies)
cotton
cuffs
fabrics
leather
textiles
vests

clotting
RT blood coagulation
embolisms
thrombocytes
thromboplastin

cloud chambers
DEF Devices for observing the paths of ionizing particles, based on the principle that supersaturated vapor condenses more readily on ions than on neutral molecules.
GS ionization chambers
. **cloud chambers**
RT bubble chambers
∞ chambers
radiation counters
spark chambers

cloud cover
UF *overcast*
RT anvil clouds
∞ blankets
cap clouds
cirrocumulus clouds
cirrostratus clouds
climatology
clouds (meteorology)
FIRE (climatology)
flight conditions
ISCCP Project
meteorological parameters
meteorology
METEOSAT satellite
nephanalysis
shadows
sky
sky brightness
solar radiation
sunlight
Venus clouds
Venus surface
weather forecasting

cloud dispersal
GS weather modification
. **cloud dispersal**
RT climatology

clouds (meteorology)
dispersing

cloud glaciation
GS ice formation
. **cloud glaciation**
RT freezing
graupel
hail
ice clouds
ice nuclei
snow
snow cover

cloud height indicators
UF *ceilometers*
GS measuring instruments
. indicating instruments
. . **cloud height indicators**
. meteorological instruments
. . **cloud height indicators**
RT ceilings (meteorology)

cloud photographs
GS photographs
. **cloud photographs**
RT aerial photography
all sky photography
photography
spaceborne photography
TIROS project

cloud photography
GS imagery
. photography
. . **cloud photography**
RT aerial photography
all sky photography
black and white photography
ESSA satellites
meteorological satellites
METEOSAT satellite
Nimbus 1 satellite
Nimbus 2 satellite
Nimbus project
Nimbus satellites
spaceborne photography
TIROS operational satellite system
TIROS project
TIROS satellites

cloud physics
DEF A subdivision of physical meteorology concerned with physical properties of clouds in the atmosphere and the processes occurring therein.
GS atmospheric physics
. **cloud physics**
RT Aitken nuclei
Atmospheric Cloud Physics Lab (Spacelab)
atmospheric electricity
condensation nuclei
condensing
convection clouds
drop size
fog dispersal
graupel
nephanalysis
Ophiuchi clouds
∞ physics
precipitation (meteorology)
∞ science
Venus clouds
weather modification

cloud seeding
DEF Any technique carried out with the intent of adding to a natural cloud in a planetary atmosphere certain substances that will alter the natural development of that cloud.
GS nucleation
. **cloud seeding**
weather modification
. **cloud seeding**
RT clouds (meteorology)
precipitation (meteorology)
rain
rainmaking
stimulation

∞ **clouds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT clouds (meteorology)
dust
electron clouds
exhaust clouds
H I regions
H II regions
hydrogen clouds
ice clouds
infrared cirrus (astronomy)
Magellanic clouds
magnetic clouds
meteoroid dust clouds
molecular clouds
Oort cloud
Ophiuchi clouds
particles
plasma clouds
Venus clouds

clouds (meteorology)
DEF A visible mass of water vapor suspended in the atmosphere above the Earth's surface.
UF *chaotic cloud patterns*
GS **clouds (meteorology)**
. artificial clouds
. . chemical clouds
. . . barium ion clouds
. cap clouds
. cirrocumulus clouds
. cirrostratus clouds
. cirrus clouds
. cirrus shields
. convection clouds
. . arc clouds
. . cumulonimbus clouds
. . . anvil clouds
. . cumulus clouds
. . . anvil clouds
. ice clouds
. nimbostratus clouds
. noctilucent clouds
. stratocumulus clouds
. stratus clouds
RT acid rain
Alpine meteorology
atmospheric correction
atmospheric moisture
climatology
cloud cover
cloud dispersal
cloud seeding
∞ clouds
condensation nuclei
drop size
FIRE (climatology)
fog
fog dispersal
ISCCP Project
meteorology
nephanalysis
precipitation (meteorology)
shadows
sky
thunderstorms
weather

clumps
RT agglomeration
atomic clusters
∞ clusters
metal clusters
molecular clusters
pattern recognition
regression analysis

cluster analysis
DEF The analysis of data with the object of finding natural groupings within the data either by hand or with the aid of a computer.
RT classifications
image analysis
image processing
pattern recognition
remote sensing
statistical analysis

Cluster Mission
(added September 1989)
GS space missions
. **Cluster Mission**
RT Earth magnetosphere
European space programs
international cooperation
∞ missions
NASA space programs
scientific satellites
SOHO Mission
solar terrestrial interactions
solar wind
space plasmas

cluster variation method
(added July 1997)
DEF An exact, statistical-mechanical technique for approximating the configurational entropy of a crystalline material, such as an alloy. The method is based on the cluster-cumulant expansion of entropy, that involves the expansion of the thermodynamic quantities of an infinite system in terms of the density matrices of finite groups of lattice sites called clusters. The method, first proposed by Kikuchi, was developed as a theoretical tool for dealing with atomic ordering.
UF *CVM (solid state)*
RT binary alloys
body centered cubic lattices
face centered cubic lattices
Hamiltonian functions
intermetallics
Ising model
∞ methodology
order–disorder transformations
phase diagrams
phase transformations
solid solutions
statistical mechanics
ternary alloys

∞ **clusters**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT atomic clusters
clumps
galactic clusters
globular clusters
metal clusters
molecular clusters

Pleiades cluster
Praesepe star clusters
star clusters
Virgo galactic cluster

clutches
RT engine parts
mechanical devices
mechanical drives

clutter
DEF Atmospheric noise, extraneous signals, etc. which tend to obscure the reception of a desired signal in a radio receiver, radarscope, etc.
GS echoes
. radar echoes
. . **clutter**
RT airborne radar
jamming
radio frequency interference

CMOS
DEF The combination of a PMOS (p–type channel metal oxide semiconductor) with an NMOS (n–type channel metal oxide semiconductor). Used for complementary metal oxide semiconductors.
UF *complementary metal oxide semiconductors*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . metal oxide semiconductors
. . . . **CMOS**
semiconductors (materials)
. metal oxide semiconductors
. . **CMOS**
RT ITO (semiconductors)
latch–up

CN emission
DEF Radio waves emitted from incandescent gaseous cyanide (CN) in space under low pressures at wavelengths characteristic of the elements comprising the gas. Used for cyanide emission.
UF *cyanide emission*
GS electromagnetic radiation
. radio waves
. . radio emission
. . . **CN emission**
emission
. radio emission
. . **CN emission**
RT hydrocyanic acid
millimeter waves
radio sources (astronomy)

cnoidal waves
DEF Finite amplitude progressive waves in shallow water having a wave profile represented by the Jacobian elliptic function "CN."
RT elastic waves
gravity waves
shallow water
solitary waves
surface waves
water depth
water waves
∞ waves

CNSR
USE **Rosetta mission**

Coachella Valley (CA)
GS valleys
. **Coachella Valley (CA)**
RT California
deserts

coagulation
GS **coagulation**
. blood coagulation
RT accumulations
agglomeration
Aitken nuclei
blood
coalescing
concentrating
deposition
embolisms
fibrin
flocculating
flotation
gelation
hardening (materials)
hemorrhages
lumping
precipitation (chemistry)
∞ separation
∞ setting
settling
solidification
thrombopenia
water treatment

coal
DEF A brown to black combustible sedimentary rock (in the geological sense) composed principally of consolidated and chemically altered plant remains.
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . fossil fuels
. . . . **coal**
. . . . . anthracite
. . . . . lignite
. . . . . solvent refined coal
resources
. Earth resources
. . fossil fuels
. . . **coal**
. . . . anthracite
. . . . lignite
. . . . solvent refined coal
rocks
. sedimentary rocks
. . carbonaceous rocks
. . . **coal**
. . . . anthracite
. . . . lignite
. . . . solvent refined coal
RT ashes
asphaltenes
bitumens
carbonaceous materials
coal derived gases
coal derived liquids
coal gasification
coal liquefaction
coal utilization
coke
energy policy
fly ash
hydropyrolysis
peat
regolith
soils
strip mining
synthane

coal derived gases
DEF The gases which are derived from various coal gasification processes.
RT catalysts
coal
coal derived liquids
coal gasification
coal utilization
methane

coal derived liquids
DEF Fluid hydrocarbons derived from the liquefaction of coal.
RT asphaltenes
catalysts
coal
coal derived gases
coal gasification
coal liquefaction
coal utilization

coal gasification
GS gasification
. **coal gasification**
. . hydropyrolysis
RT coal
coal derived gases
coal derived liquids
coal liquefaction
cracking (chemical engineering)
energy policy
fuel cell power plants
gases
hydrocarbon fuels
hydrocracking
lignite
methanation
synthane
volatility

coal liquefaction
GS phase transformations
. liquefaction
. . **coal liquefaction**
RT asphaltenes
coal
coal derived liquids
coal gasification
energy policy
hydrocarbon fuels
hydrocracking
hydropyrolysis
lignite
melting
solvent refined coal

coal utilization
GS utilization
. **coal utilization**
RT coal
coal derived gases
coal derived liquids
energy consumption
energy policy
energy technology
hydrocarbon fuels
lignite
solvent refined coal

coalescence
USE **coalescing**

coalescing
DEF Growing of grains at the expense of the remainder by adsorption or the growth of a phase or particle at the expense of the remainder by

absorption or by reprecipitation. Used for coalescence.
UF *coalescence*
RT agglomeration
agitation
coagulation
concentrating
flocculating
magnetic islands
mixers
∞ separation
settling
thickeners (equipment)

Coanda effect
RT ∞ attachment
bubbles
circulation control airfoils
∞ effects
entrainment
fluid amplifiers
jet amplifiers
jet streams (meteorology)
reattached flow
∞ separation
thrust augmentation

coarseness
RT fineness
Ostwald ripening
reflectance
roughness
surface properties
surface roughness
surface stability
surface temperature

coastal currents
DEF Ocean currents caused by the approach of waves to coasts at an angle. They flow parallel to and near the shore. Used for littoral currents and longshore currents.
UF *littoral currents*
longshore currents
GS circulation
. water circulation
. . water currents
. . . ocean currents
. . . . **coastal currents**
RT beaches
coasts
∞ currents
gyres
oceanography
oceans
sea truth
seas
tides
wetlands

coastal dunes
USE **dunes**

coastal ecology
GS ecology
. **coastal ecology**
RT biometeorology
coasts
Earth resources
environment effects
environments
marine environments
marine resources
oil pollution
phenology
thermal pollution
waterfowl
wetlands

coastal marshlands
USE **marshlands**

coastal plains
GS land
. plains
. . **coastal plains**
landforms
. plains
. . **coastal plains**
RT bars (landforms)
beaches
biometeorology
coasts
Earth resources
ecology
environments
piedmonts
wetlands

coastal ranges (CA)
GS landforms
. mountains
. . **coastal ranges (CA)**
RT California
Pacific Ocean

coastal water
GS water
. nearshore water
. . **coastal water**
RT Coastal Zone Color Scanner
environment effects
ocean color scanner
oceans
sea water
shellfish
shorelines
vadose water
water depth
wetlands

Coastal Zone Color Scanner
DEF A spaceborne instrument devoted to the measurement of ocean color. Every parameter is optimized for use over water to the exclusion of other types of sensing.
GS scanners
. ocean color scanner
. . **Coastal Zone Color Scanner**
RT chlorophylls
coastal water
colorimetry
multispectral band scanners
ocean data acquisitions systems
oceanographic parameters
oceanography
photomapping
remote sensing
remote sensors
satellite imagery
water color

coasting flight
DEF The flight of a rocket between burnout of thrust cutoff of one stage and ignition of another, or between burnout and summit altitude or maximum horizontal range.
RT ascent trajectories
ballistic trajectories
climbing flight
cruising flight
descent trajectories
∞ flight
midcourse trajectories
parabolic flight
rocket flight
soaring

coasts
DEF The strips of land of indefinite width (may be many kilometers) that extend from the low tide line inland to the first major change in landforms.
RT beaches
Caspian Sea
coastal currents
coastal ecology
coastal plains
coral reefs
cusps (landforms)
dunes
estuaries
lagoons
lakes
littoral drift
marine environments
oceans
seas
shorelines
storm surges
tidal flats
upwelling water

coating
GS **coating**
. anodizing
. electroplating
. encapsulating
. metallizing
RT anodic stripping
coatings
corrosion prevention
deposition
flame plating
flame spraying
lining processes
metal finishing
metal spraying
∞ metallurgy
metalorganic chemical vapor deposition
plasma spraying
∞ priming
sealing
siliconizing
spraying
surface finishing
surface properties
surface treatment
vapor deposition

coatings
DEF Liquid, liquefiable or mastic compositions which are converted to a solid protective, decorative, or functional adherent film after application as a thin layer.
GS **coatings**
. antiradar coatings
. antireflection coatings
. birefringent coatings
. cathodic coatings
. electroplating
. enamels
. encapsulating
. glass coatings
. glazes
. inorganic coatings
. . anodic coatings
. . ceramic coatings
. lacquers
. magnetic films
. metal coatings
. . aluminum coatings
. . gold coatings
. . nickel coatings
. . zinc coatings
. metallizing

. paints
. plastic coatings
. protective coatings
. . anodic coatings
. . ceramic coatings
. . primers (coatings)
. . refractory coatings
. rubber coatings
. sprayed coatings
. thermal control coatings
RT additives
coating
composite materials
corrosion
corrosion prevention
coverings
cryodeposits
deposition
deposits
diamond films
dipping
electroless deposition
energy absorption films
epoxy resins
fabrics
∞ films
finishes
flame spraying
furan resins
hot corrosion
impregnating
inhibitors
laminates
Langmuir–Blodgett films
∞ layers
lining processes
linings
metal films
metal finishing
metal spraying
∞ metallurgy
moisture resistance
passivity
pavements
plasma spraying
plasticizers
∞ priming
protection
rusting
sealers
sealing
∞ sheets
siliconizing
solvents
spraying
substrates
surface finishing
surface properties
thin films
vapor deposition
veneers
waterproofing
waxes
weatherproofing
wings

coaxial cables
DEF Waveguides consisting of two concentric conductors insulated from each other. Used for coaxial transmission.
UF *coaxial transmission*
GS transmission lines
. communication cables
. . **coaxial cables**
RT∞ cables
power lines
submarine cables
waveguides

coaxial flow
GS fluid flow
. **coaxial flow**
RT annular flow
annular nozzles
axial flow
axisymmetric flow
flow geometry
Hilsch tubes
shear flow
stratified flow
two dimensional flow

coaxial nozzles
DEF Class of nozzle configurations in jet aircraft for reducing noise.
RT aircraft noise
axial flow
fluid flow
noise reduction
nozzle geometry
∞ nozzles
supersonic nozzles
variable cycle engines

coaxial plasma accelerators
GS plasma accelerators
. **coaxial plasma accelerators**
RT∞ accelerators
plasma engines
plasma guns

coaxial transmission
USE **coaxial cables**
transmission

cobalt
GS chemical elements
. **cobalt**
. . cobalt isotopes
. . . cobalt 58
. . . cobalt 60
metals
. transition metals
. . **cobalt**
. . . cobalt isotopes
. . . . cobalt 58
. . . . cobalt 60
RT strategic materials

cobalt 58
GS chemical elements
. cobalt
. . cobalt isotopes
. . . **cobalt 58**
. nuclides
. . isotopes
. . . cobalt isotopes
. . . . **cobalt 58**
. . . radioactive isotopes
. . . . **cobalt 58**
metals
. transition metals
. . cobalt
. . . cobalt isotopes
. . . . **cobalt 58**

cobalt 60
GS chemical elements
. cobalt
. . cobalt isotopes
. . . **cobalt 60**
. nuclides
. . isotopes
. . . cobalt isotopes
. . . . **cobalt 60**
. . . radioactive isotopes
. . . . **cobalt 60**
metals
. transition metals
. . cobalt
. . . cobalt isotopes
. . . . **cobalt 60**

cobalt acetates
GS acetates
. **cobalt acetates**
cobalt compounds
. **cobalt acetates**
esters
. **cobalt acetates**

cobalt alloys
GS alloys
. **cobalt alloys**
. . Astroloy (trademark)
. . Rene 41
. . Rene 63
. . Rene 77
. . Rene 95
RT heat resistant alloys
Kovar (trademark)
Stellite (trademark)
Waspaloy

cobalt compounds
GS **cobalt compounds**
. cobalt acetates
. cobalt fluorides
. cobalt oxalates
. cobalt oxides
. cohenite
RT∞ chemical compounds
Group 8 compounds
∞ metal compounds

cobalt fluorides
GS cobalt compounds
. **cobalt fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **cobalt fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **cobalt fluorides**
. . metal halides
. . . metal fluorides
. . . . **cobalt fluorides**

cobalt isotopes
GS chemical elements
. cobalt
. . **cobalt isotopes**
. . . cobalt 58
. . . cobalt 60
. nuclides
. . isotopes
. . . **cobalt isotopes**
. . . . cobalt 58
. . . . cobalt 60
metals
. transition metals
. . cobalt
. . . **cobalt isotopes**
. . . . cobalt 58
. . . . cobalt 60

cobalt oxalates
GS cobalt compounds
. **cobalt oxalates**

oxalates
. **cobalt oxalates**

cobalt oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **cobalt oxides**
cobalt compounds
. **cobalt oxides**

COBE
USE **Cosmic Background Explorer satellite**

Cobol
UF *Common Business Oriented Language*
GS languages
. programming languages
. . **Cobol**
RT FORTRAN
PL/1

Cobra Dane (radar)
DEF Radar installation for monitoring Soviet missiles.
GS radar
. surveillance radar
. . **Cobra Dane (radar)**
. tracking radar
. . **Cobra Dane (radar)**
RT antenna arrays
early warning systems
missile trajectories
radar signatures

Coccomyces
GS plants (botany)
. fungi
. . **Coccomyces**

cochlea
GS anatomy
. sense organs
. . ear
. . . labyrinth
. . . . **cochlea**
. . . . . Corti organ

Cock aircraft
USE **AN-22 aircraft**

cockpit assistant systems
USE **pilot support systems**

cockpit simulators
GS simulators
. training simulators
. . flight simulators
. . . **cockpit simulators**
training devices
. training simulators
. . flight simulators
. . . **cockpit simulators**
RT spacecraft cabin simulators
training devices
virtual reality

cockpit weather information systems
(added August 1996)
DEF A cockpit display system that provides flight crews with a graphical display of interactive weather information, including surface observations, terminal forecasts, radar summaries, and lightning strike data. The system also provides weather trend information and has zooming capabilities that enable the user to see information for the entire nation or to focus on specific areas.
GS information systems
. **cockpit weather information systems**
RT airborne equipment
cockpits
display devices
flight conditions
flight instruments
meteorological parameters
weather forecasting

cockpits
RT aircraft compartments
cabin atmospheres
∞ cabins
canopies
cockpit weather information systems
ejection seats
flying ejection seats
fuselages
pilot support systems
pressurized cabins
space capsules
spacecraft cabin atmospheres
spacecraft cabins
windshields

cockroaches
UF *Blattidae*
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **cockroaches**

cocks
UF *stopcocks*
GS valves
. **cocks**
RT gas valves
hydraulic equipment

COD (cracks)
USE **crack opening displacement**

COD aircraft
USE **C-2 aircraft**

code division multiple access
DEF Multiple access system in which users are segregated by means of pseudorandom signal coding and bandwidth spreading so that the complete time and frequency axes are occupied and only the power is shared. Used for CDMA.
UF *CDMA*
GS telecommunication
. multiple access
. . **code division multiple access**
. radio communication
. . radio relay systems
. . . **code division multiple access**
transmission
. signal transmission
. . data transmission
. . . multiple access
. . . . **code division multiple access**
RT Aloha system
frequency division multiple access
multichannel communication
multiplexing
satellite networks
switching
wideband communication

code division multiplexing
DEF The separation of two or more simultaneous radio transmissions over a common path by signal coding and bandwidth spreading.
GS transmission
. multiplexing
. . **code division multiplexing**
RT data transmission
demultiplexing
frequency division multiple access
radio communication
radio transmission
satellite transmission
signal transmission
telecommunication
wavelength division multiplexing

coders
UF *encoders*
RT analog to digital converters
coding
decoders
programmers

∞ **codes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT BCH codes
binary codes
bitemary code
coding
color coding
concatenated codes
cryptography
digits
error correcting codes
error detection codes
Morse code
Reed-Solomon codes
standards
symbols
trellis coding

coding
UF *encoding*
notation
GS **coding**
. decoding
. redundancy encoding
. signal encoding
. . amplitude modulation
. . . quadrature amplitude modulation
. . frequency modulation
. . . feedback frequency modulation
. . . FM/PM (modulation)
. . . frequency shift keying
. . . pulse frequency modulation
. . phase modulation
. . . FM/PM (modulation)
. . . phase shift keying
. . . . binary phase shift keying
. . . . quadrature phase shift keying
. . pulse modulation
. . . pulse amplitude modulation
. . . pulse code modulation
. . . . delta modulation
. . . . differential pulse code modulation
. . . pulse frequency modulation
. . . pulse time modulation
. . . . pulse duration modulation
. . . . pulse position modulation
. . trellis coding
. Wiswesser notations
RT abbreviations
addressing
alphabets
analog to digital converters
BCH codes
coders
∞ codes
color coding
computer programming

computer programs
concatenated codes
cryptography
data transmission
dictionaries
digital techniques
error detection codes
identifying
information theory
languages
parity
pulse compression
Reed-Solomon codes
symbolic programming
symbols
vector quantization
Viterbi decoders

coefficient of friction
UF *friction coefficient*
GS coefficients
. **coefficient of friction**
surface properties
. **coefficient of friction**
RT friction
friction factor
friction reduction
kinetic friction
sliding friction
static friction
wear resistance

coefficients
GS **coefficients**
. accommodation coefficient
. aerodynamic coefficients
. attenuation coefficients
. binomial coefficients
. Clebsch-Gordan coefficients
. coefficient of friction
. coherence coefficient
. correlation coefficients
. coupling coefficients
. diffusion coefficient
. . Soret coefficient
. flow coefficients
. . discharge coefficient
. heat transfer coefficients
. hydrodynamic coefficients
. influence coefficient
. . structural influence coefficients
. ionization coefficients
. nozzle thrust coefficients
. Onsager phenomenological coefficient
. recombination coefficient
. regression coefficients
. scattering coefficients
. virial coefficients
. Wigner coefficient
RT ∞ constant
constants
mechanical properties
optical properties
polynomials
Racah coefficient
statistical analysis
∞ **weight**

coenzymes
GS organic compounds
. **coenzymes**
. . adenosine diphosphate
. . adenosine triphosphate
. . cyclic AMP
. . glutathione
. . thiamine
RT enzymes

coercivity
RT magnetic properties
magnetization

coesite
DEF A polymorph of silicon dioxide.
GS chalcogenides
. oxides
. . dioxides
. . . silicon dioxide
. . . . quartz
. . . . . **coesite**
. . silicon oxides
. . . silicon dioxide
. . . . quartz
. . . . . **coesite**
minerals
. quartz
. . **coesite**
silicon compounds
. silicon oxides
. . silicon dioxide
. . . quartz
. . . . **coesite**
RT Earth crust
Earth mantle
meteorites
rutile
stishovite
stony meteorites
tektites

coffee
GS farm crops
. **coffee**
RT beverages

Coffin-Manson law
DEF A relationship which enables one to estimate the fatigue life from the cyclic plastic strain range. The specific life for a given metal or alloy is determined by its tensile ductility.
GS laws
. **Coffin-Manson law**
RT crack propagation
fatigue life
fatigue tests
metal fatigue

cogeneration
DEF The generation of electricity or shaft power by an energy conversion system and the concurrent use of the rejected thermal energy from the conversion system as an auxiliary energy source.
RT electric generators
electric power plants
energy conversion
∞ generation
heat generation
∞ power plants
solar energy conversion
thermal energy
waste energy utilization

cognition
RT artificial intelligence
cognitive psychology
decision making
identifying
IFF systems (identification)
information processing (biology)
knowledge representation
perception

cognitive psychology
GS psychology
. **cognitive psychology**
RT cognition
information processing (biology)
intelligence
mental performance

COGO (programming language)
UF *coordinate geometry language*
GS languages
. programming languages
. . **COGO (programming language)**

cohenite
GS cobalt compounds
. **cohenite**
iron compounds
. **cohenite**
minerals
. **cohenite**
nickel compounds
. **cohenite**

∞ **coherence**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT coherent radiation
coherent scattering
cohesion
congruences
elastic scattering
intelligibility
laser outputs
lasers
maser outputs
phase coherence
wave dispersion
wave propagation

coherence coefficient
GS coefficients
. **coherence coefficient**
RT coherent radar
coherent radiation
∞ interference
noise propagation
phase coherence
stochastic processes

coherent acoustic radiation
GS coherent radiation
. **coherent acoustic radiation**
elastic waves
. **coherent acoustic radiation**
RT ∞ radiation
ultrasonic radiation
underwater acoustics

coherent anti-Stokes Raman spectroscopy
USE **Raman spectroscopy**

coherent electromagnetic radiation
GS coherent radiation
. **coherent electromagnetic radiation**
. . coherent light
. . laser beams
electromagnetic radiation
. **coherent electromagnetic radiation**
. . coherent light
. . laser beams
RT beams (radiation)
holography
infrared radiation
interstellar masers
ionizing radiation
krypton fluoride lasers
lasers
light (visible radiation)
masers

modulated continuous radiation
monochromatic radiation
∞ radiation
radio waves
squeezed states (quantum theory)
stimulated emission
stimulated emission devices
traveling wave masers
ultraviolet radiation

coherent light
DEF Light in which the phase relationship between points in a beam remains constant throughout the beam.
GS coherent radiation
. coherent electromagnetic radiation
. . **coherent light**
electromagnetic radiation
. coherent electromagnetic radiation
. . **coherent light**
. light (visible radiation)
. . **coherent light**
RT four-wave mixing
gamma ray lasers
HCN lasers
holographic interferometry
holography
laser outputs
lasers
monochromatic radiation
neodymium lasers
optical computers
optical memory (data storage)
phase coherence
plasmadynamic lasers
rare gas-halide lasers
scatter plates (optics)
Shiva laser system
speckle holography
squeezed states (quantum theory)
stimulated emission
two-wavelength lasers
ultraviolet lasers

coherent radar
DEF A type of radar that employs circuitry which permits comparison of the phase of successive received target signals.
GS radar
. **coherent radar**
RT coherence coefficient
continuous wave radar
Doppler radar
moving target indicators
pulse Doppler radar
pulse radar
radar detection
search radar
surveillance radar
tracking radar

coherent radiation
UF *coherent sources*
coherent transmission
GS **coherent radiation**
. coherent acoustic radiation
. coherent electromagnetic radiation
. . coherent light
. . laser beams
RT beams (radiation)
∞ coherence
coherence coefficient
continuous radiation
corpuscular radiation
elastic waves
electromagnetic radiation
light (visible radiation)
optical properties
∞ radiation
∞ rays
wave propagation

coherent scattering
DEF Scattering of photons or particles in which there are define phase relationships between the incoming and scattered waves. Ordinary scattering is coherent. With coherent scattering, interference occurs between the waves scattered by two or more scattering centers. The total intensity is the vector sum of the amplitudes of the various waves.
GS scattering
. **coherent scattering**
RT ∞ coherence
Compton effect
elastic scattering
incoherent scattering
inelastic scattering
nuclear scattering

coherent sources
USE **coherent radiation**
radiation sources

coherent transmission
USE **coherent radiation**

cohesion
DEF The mutual attraction by which elements of a substance are held together.
RT agglutination
bonding
∞ coherence
internal friction
internal pressure
plastic properties
spreading

cohomology
USE **homology**

COIL (lasers)
USE **chemical oxygen-iodine lasers**

∞ **coils**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT electric coils
inductors
magnet coils
magnetic coils
springs (elastic)
toroids
wire

COIN aircraft
UF *counterinsurgency aircraft*
LARA aircraft
light armed reconnaissance aircraft
GS attack aircraft
. **COIN aircraft**
. . F-5 aircraft
. . OV-10 aircraft
RT ∞ aircraft
light intratheater transport

coincidence circuits
DEF Circuits that produce a usable output only when each of two or more input circuits receive pulses simultaneously or within an assignable time interval.
GS circuits
. **coincidence circuits**
RT gates (circuits)
radiation counters
synchronism

coining
GS forming techniques
. pressing (forming)
. . **coining**
metal working
. **coining**
RT cold pressing
cold working
dies
forging
hot isostatic pressing
hot pressing
sizing (shaping)
stamping

coke
GS fuels
. **coke**
RT bitumens
carbon
charcoal
coal
lignite

Coke aircraft
USE **AN-24 aircraft**

colchicine
GS bases (chemical)
. alkaloids
. . **colchicine**
nitrogen compounds
. alkaloids
. . **colchicine**
organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . **colchicine**
. . heterocyclic compounds
. . . alkaloids
. . . . **colchicine**
. hydrocarbons
. . cyclic hydrocarbons
. . . **colchicine**

cold acclimatization
GS adaptation
. acclimatization
. . **cold acclimatization**
RT heat acclimatization
subzero temperature

cold blooded animals
USE **poikilothermia**

Cold Bokkeveld meteorite
GS celestial bodies
. meteorites
. . stony meteorites
. . . carbonaceous meteorites
. . . . carbonaceous chondrites
. . . . . **Cold Bokkeveld meteorite**
. . . chondrites
. . . . carbonaceous chondrites
. . . . . **Cold Bokkeveld meteorite**

cold cathode tubes
DEF Electron tubes containing cold cathodes.
GS electron tubes
. **cold cathode tubes**
. . phototubes
. . . photomultiplier tubes
. . . . frequency modulation photomultipliers
RT cathodes
electrodes
gas discharges
∞ gas tubes

tube cathodes
tunnel cathodes

cold cathodes
DEF Cathodes that function without the application of heat.
GS electrodes
. cathodes
. . tube cathodes
. . . **cold cathodes**
RT gas discharges
tunnel cathodes

cold drawing
DEF Reducing the cross section (of wire) by pulling through a die or dies, at a temperature lower than the recrystallization temperature.
RT deep drawing
∞ drawing
metal drawing

cold flow tests
SN (EXCLUDES MECHANICAL CREEP TESTS)
DEF Tests of liquid rockets without firing them to check or verify the efficiency of a propulsion subsystem, providing for the conditioning and flow of propellants (including tank pressurization, propellant loading, and propellant feeding).
GS engine tests
. **cold flow tests**
ground tests
. **cold flow tests**
RT checkout
feed systems
plastic properties
prelaunch tests
propellant tests
propulsion system performance
rocket engine design
static tests
∞ tests

cold forming
USE **cold working**

cold fronts
GS fronts (meteorology)
. **cold fronts**
RT air masses
∞ fronts
meteorological parameters
meteorology
storms
synoptic meteorology
thunderstorms
tornadoes
warm fronts
weather forecasting

cold gas
GS gases
. **cold gas**
RT attitude control
gas jets
jet thrust

cold hardening
SN (LIMITED TO HARDENING OF MATERIALS BY COOLING TO VERY LOW TEMPERATURES— EXCLUDES PRECIPITATION HARDENING AT OR NEAR ROOM TEMPERATURE AND HARDENING VIA COLD WORKING)
GS hardening (materials)
. **cold hardening**
RT brittleness
hardness
phase transformations
precipitation hardening
work hardening

cold neutrons
DEF Neutrons of less velocity than thermal neutrons; at 152 deg. C their energy is below 0.01 eV.
GS particles
. elementary particles
. . fermions
. . . neutrons
. . . . **cold neutrons**
. neutral particles
. . neutrons
. . . **cold neutrons**
RT baryons

cold plasmas
UF *low temperature plasmas*
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **cold plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **cold plasmas**
RT collisionless plasmas
rarefied plasmas

cold pressing
RT coining
compacting
hot isostatic pressing
hot pressing
metal working
∞ pressing
pressing (forming)
upsetting

cold rolling
GS forming techniques
. cold working
. . **cold rolling**
RT metal working

cold strength
GS mechanical properties
. **cold strength**
RT high temperature tests
low temperature environments
low temperature tests
∞ strength

cold surfaces
UF *cold walls*
RT cryogenic fluid storage
∞ surfaces

cold tolerance
GS tolerances (physiology)
. **cold tolerance**
RT body temperature
exposure
frostbite
heat tolerance
homeostasis
subzero temperature
thermoregulation
vasoconstriction

cold traps
GS traps
. **cold traps**
RT condensers (liquefiers)
cryogenic temperature
cryogenics
cryotrapping
freezing
refrigerating
vacuum apparatus
vapor traps

cold walls
USE **cold surfaces**
walls

cold water
GS water
. **cold water**
RT potable water

cold weather
GS weather
. **cold weather**
RT frost damage
low temperature environments
pressure ice
snow cover
subzero temperature
weatherproofing
winter

cold weather tests
GS environmental tests
. **cold weather tests**
RT high temperature tests
low temperature tests
∞ tests

cold welding
GS welding
. pressure welding
. . **cold welding**
RT adhesion
bonding
high vacuum
vacuum effects

cold working
DEF Deforming metal plasticity at a temperature lower than the recrystallization temperature. Used for cold forming.
UF *cold forming*
GS forming techniques
. **cold working**
. . cold rolling
. . electrohydraulic forming
. . explosive forming
RT cladding
coining
deep drawing
extruding
forging
∞ joining
magnetic forming
metal drawing
metal spinning
metal working
peening
roll forming
shearing
shot peening
stamping
stretch forming
stretching
swaging
temper (metallurgy)
upsetting
winding

Coleopters
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **Coleopters**
. . . . . beetles

. . . . . tribolia
. . . . . boll weevils

colic
GS diseases
. **colic**
RT gastrointestinal system
intestines

collagens
GS anatomy
. musculoskeletal system
. . connective tissue
. . . **collagens**
RT bone mineral content
gelatins
leather
proteins
skin (anatomy)

collapse
GS **collapse**
. gravitational collapse
RT buckling
deformation
failure
structural failure

collating
RT binding
compilers
correlation
insertion
position (location)
positioning

collection
RT accumulations
acquisition
assembling
input
lumping
museums
∞ receiving
sampling
selection
stockpiling

collectors
USE **accumulators**

colleges
USE **universities**

collimation
GS **collimation**
. beamforming
RT adjusting
alignment
beam steering
directivity
four-wave mixing
microbeams
∞ orientation
polarization (waves)

collimators
DEF Optical devices which render rays of light parallel. Used for autocollimators.
UF *autocollimators*
GS optical equipment
. **collimators**
RT beam waveguides
mirrors
optical measurement

collinearity
GS analysis (mathematics)
. calculus
. . vector analysis
. . . **collinearity**
. real variables
. . vector analysis
. . . **collinearity**
geometry
. vector analysis
. . **collinearity**
linearity
. **collinearity**

collision avoidance
UF *collision warning devices*
GS avoidance
. **collision avoidance**
. . Beacon Collision Avoidance System
RT air navigation
air traffic
air traffic control
aircraft approach spacing
aircraft guidance
aircraft safety
airspace
approach control
automatic traffic advisory and resolution
collisions
flight paths
flight rules
flight safety
midair collisions
National Airspace Utilization System
radar
radar navigation
radio navigation
threat evaluation
traffic control
visual flight
warning
warning systems

collision parameters
DEF In orbit computation, the distances between centers of attraction of central force fields and the extension of velocity vectors of moving objects at great distances from the centers. In gas dynamics and atomic physics, any of several parameters such as cross section, collision rate, mean free path, etc., which provide a measure of the probability of collision.
GS **collision parameters**
. collision rates
RT ∞ absorption
beam interactions
∞ cross sections
mean free path
nuclear interactions
particle interactions
particle theory
scattering

collision rates
DEF Ratios defined by the average number of collisions per second suffered by a molecule or other particle moving through a gas.
GS collision parameters
. **collision rates**
rates (per time)
. **collision rates**

collision warning devices
USE **collision avoidance**
warning systems

collisional plasmas
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **collisional plasmas**
. . . . . strongly coupled plasmas
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **collisional plasmas**
. . . . . strongly coupled plasmas
RT electron runaway (plasma physics)
high temperature plasmas
nuclear fusion
plasma conductivity
plasma density
plasma waves

collisionless plasmas
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **collisionless plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **collisionless plasmas**
RT cold plasmas
ionic waves
Kelvin–Helmholtz instability
low density research
magnetic islands
rarefied plasmas

collisions
GS **collisions**
. atomic collisions
. cometary collisions
. Coulomb collisions
. inelastic collisions
. ionic collisions
. meteorite collisions
. midair collisions
. . bird–aircraft collisions
. asteroid collisions
. molecular collisions
. particle collisions
RT air bag restraint devices
air traffic control
aircraft accidents
aircraft hazards
aircraft safety
collision avoidance
crashes
flight hazards
flight paths
gas atomization
impact velocity
pilot error
recoilings
scattering

collocation
RT assemblies
∞ assembly
congruences
position (location)
positioning

colloidal generators
RT atomizing
dispersions
∞ generators
plasma diffusion
plasma generators
sprayers
vaporizers

colloidal propellants
UF *cordite*
GS mixtures

. dispersions
. . colloids
. . . **colloidal propellants**
propellants
. **colloidal propellants**
RT **gelled propellants**
slurry propellants
solid propellants
solid suspensions

colloiding
UF *lyophilization*
GS mixing
. **colloiding**
RT **agitation**
atomizing
colloids
comminution
compounding
dispersing
flocculating
gelation
homogenizing
precipitation (chemistry)
suspending (mixing)

colloids
UF *lyophils*
GS mixtures
. dispersions
. . **colloids**
. . . **aerosols**
. . . . fog
. . . colloidal propellants
RT Brownian movements
clays
colloiding
electrodialysis
electrophoresis
emulsions
foams
gels
homeostasis
nonNewtonian fluids
particles
plastisols
∞ separation

Colombia
GS nations
. **Colombia**
RT Llanos Orientales (Colombia)
Magdalena–Cauca Valley (Colombia)
South America

colonies
RT **bacteria**
bacteriology

color
UF *coloration*
GS **electromagnetic properties**
. optical properties
. . **color**
. . . **iridescence**
. . . **stellar color**
. . . **water color**
RT **brightness**
chromophores
colorimetry
contrast
darkness
dichroism
discoloration
electrochromism
fading
human factors engineering
incandescence
isochromatics
light (visible radiation)
perception
phototropism
∞ physical properties
prewhitening
spectra
surface properties
symbols
thermochromatic materials
vegetative index
visibility
vision
wave dispersion

color (particle physics)
USE **quantum chromodynamics**

color centers
UF *F centers*
RT ∞ centers
Franck–Condon principle

color coding
DEF Any system of colors used for purposes of identification. Used for color enhancement.
UF *color enhancement*
RT ∞ codes
coding

color enhancement
USE **color coding**

color infrared photography
DEF A representation of temperature differences using false colors.
GS imagery
. photography
. . multispectral photography
. . . infrared photography
. . . . **color infrared photography**
RT color photography
infrared imagery

color perception
USE **color vision**

color photography
GS imagery
. photography
. . **color photography**
RT aerial photography
black and white photography
cinematography
color infrared photography
orthophotography
photochromism
photomapping
shadowgraph photography
stereophotography
ultraviolet photography
underwater photography

color television
GS telecommunication
. **color television**
television systems
. **color television**
RT closed circuit television
communicating
communication equipment
educational television
satellite television
spacecraft television
stereotelevision
television reception
television transmission

color vision
UF *color perception*
GS vision
. **color vision**
RT eye (anatomy)
Young–Helmholtz theory

color–color diagram
DEF A two-axis coordinate graph showing the distribution of stars or other objects with reference to different color indices.
GS diagrams
. **color–color diagram**
RT color–magnitude diagram
Hertzsprung–Russell diagram
stellar color
stellar spectra
stellar spectrophotometry
UBV spectra

color–magnitude diagram
DEF The plot of the absolute or apparent magnitude against the color index for a group of stars. Also known as C–M diagram. Used for C–M diagram.
UF *C–M diagram*
GS **diagrams**
. **color–magnitude diagram**
RT asymptotic giant branch stars
color–color diagram
globular clusters
Hertzsprung–Russell diagram
horizontal branch stars
main sequence stars
star clusters
stellar color
stellar evolution
stellar magnitude

Colorado
GS nations
. United States
. . **Colorado**
RT Colorado Plateau (US)
Colorado River (North America)
Manitou (CO)
Pike's Peak (CO)
San Juan Mountains (CO)

Colorado Plateau (US)
GS land
. **Colorado Plateau (US)**
landforms
. terraces (landforms)
. . plateaus
. . . **Colorado Plateau (US)**
RT Arizona
Colorado
highlands
New Mexico
Utah

Colorado River (North America)
GS rivers
. **Colorado River (North America)**
RT Arizona
Colorado
Mexico
Utah

coloration
USE **color**

colorimetry
GS optical measurement
. **colorimetry**
RT chemical analysis
chromatography

Coastal Zone Color Scanner
color
electrophotometry
liquid chromatography
ocean color scanner
optical measuring instruments
photometry
spectrophotometry
spectroscopy
thermochromatic materials

coils
USE **gaps (geology)**

Columbia (Orbiter)
UF *Space Shuttle Orbiter 102*
GS manned spacecraft
. space shuttles
. . Space Shuttle orbiters
. . . **Columbia (Orbiter)**
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . space shuttles
. . . . Space Shuttle orbiters
. . . . . **Columbia (Orbiter)**
RT manned space flight
Space Shuttle mission 31-A
Space Shuttle mission 41-A
Space Shuttle mission 61-A
Space Shuttle mission 61-C
Space Shuttle mission 61-E
∞ spacecraft

Columbia River Basin (ID-OR-WA)
GS landforms
. structural basins
. . river basins
. . . **Columbia River Basin (ID-OR-WA)**
RT Idaho
Oregon
rivers
Washington

columbium
USE **niobium**

Columbus space station
DEF The European Space Agency's manned orbital platform.
GS artificial satellites
. space stations
. . **Columbus space station**
ESA spacecraft
. **Columbus space station**
manned spacecraft
. **Columbus space station**
space platforms
. **Columbus space station**
stations
. space stations
. . **Columbus space station**
RT AEPS
Automated Transfer Vehicle
bioastronautics
ferry spacecraft
International Space Station
intraorbit transfer vehicles
large space structures
man tended free flyers
manned orbital laboratories
military spacecraft
orbital servicing
rendezvous spacecraft
shape control
space shuttles
Space Station Freedom
space station polar platforms

∞ **columns**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT columns (process engineering)
columns (supports)

columns (process engineering)
RT absorbers (equipment)
chemical reactors
∞ columns
concentrators
condensers (liquefiers)
contactors
contractors
dehydration
dehydrogenation
distillation equipment
drying apparatus
extraction
scrubbers
separators
vaporizers

columns (supports)
GS structural members
. **columns (supports)**
. . tapered columns
RT beams (supports)
∞ columns
pylon mounting
pylons
struts
studs (structural members)
Timoshenko beams
towers

∞ **coma**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aberration
blackout (physiology)
blackout prevention
comet heads
comet nuclei
comet tails
cometary atmospheres
comets
Grigg-Skjellerup comet
Kohoutek comet
screen effect
Tempel 2 comet
unconsciousness

combat
GS military operations
. **combat**
warfare
. **combat**
RT aircraft survivability
B-1 aircraft
electronic warfare

∞ **combination**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT admixtures
consolidation
mixtures
permutations

combinations (mathematics)
GS analysis (mathematics)
. combinatorial analysis
. . **combinations (mathematics)**
RT partitions (mathematics)
permutations

combinatorial analysis
GS analysis (mathematics)
. **combinatorial analysis**
. . binomial coefficients
. . combinations (mathematics)
. . factorials
. . partitions (mathematics)
. . permutations
RT ∞ analyzing
∞ applications of mathematics
group theory
information theory
number theory
probability theory
set theory

combined cycle power generation
DEF Power generation which combines an open-cycle gas turbine and a closed-cycle steam turbine.
RT electric generators
electric power plants
energy technology
gas turbines
steam turbines

Combined Release and Radiation Effects Sat
USE **CRRES (satellite)**

combined stress
GS stresses
. **combined stress**
RT fatigue life
stress analysis
stress concentration
stress intensity factors

combustibility
USE **flammability**

combustible flow
GS fluid flow
. reacting flow
. . **combustible flow**
RT boundary layer combustion
combustion physics
combustion products
detonation waves
dump combustors
flame propagation
fuel flow
turbulent combustion
turbulent flames
turbulent flow

combustion
DEF A chemical process of oxidation that occurs at a rate fast enough to produce heat and usually light either as a glow or flames. Some oxidation such as that of hydrogen emits radiation outside the visible spectrum. Used for burning and burning process.
UF *burning*
burning process
GS **combustion**
. afterburning
. boundary layer combustion
. deflagration
. erosive burning
. fuel combustion
. . nuclear fuel burnup
. hydrocarbon combustion
. hypersonic combustion
. metal combustion
. propellant combustion
. . solid propellant combustion

. . . solid propellant ignition
. smoldering
. spontaneous combustion
. supersonic combustion
. turbulent combustion
RT backfire
burning rate
burning time
burnout
charring
chemical explosions
combustion chambers
combustion chemistry
combustion control
combustion efficiency
combustion physics
combustion products
combustion stability
combustion synthesis
combustion temperature
combustion vibration
detonation
diffusion flames
exothermic reactions
explosions
extinguishing
fire damage
firebreaks
fires
flame propagation
flameout
flames
flammability
flashback
forest fires
heat balance
heat generation
ignition
ignition limits
incendiary ammunition
internal combustion engines
oxidation
∞ physics
quenching (cooling)
spark ignition
supersonic combustion ramjet engines

combustion chambers
DEF Containers in which the actual burning of fuel takes place. Used for combustors.
UF *combustors*
GS **combustion chambers**
. dump combustors
RT burners
∞ chambers
combustion
engine parts
engines
flame holders
flameout
furnaces
internal combustion engines
jet engines
pistons
refractories
spark plugs
thrust chambers

combustion chemistry
DEF The study of the exothermic oxidation reactions occurring immediately before and during combustion.
GS thermochemistry
. **combustion chemistry**
RT chemical engineering
chemical reactions
∞ chemistry
combustion
combustion physics
combustion products
combustion stability
combustion synthesis
exothermic reactions
flame temperature
oxidation
reacting flow
reaction kinetics

combustion control
DEF Control of factors (temperature, preheating, draft, excess or deficient air, etc.) which affects combustion efficiency.
RT automatic control
burning rate
combustion
∞ control
engine control
fuel control
temperature control

combustion efficiency
DEF The efficiency with which fuel is burned, expressed as the ratio of the actual energy released by the combustion to the potential chemical energy of the fuel.
GS efficiency
. **combustion efficiency**
RT ACEE program
burning rate
burning time
combustion
dump combustors
exhaust gases
fuel combustion
fuel consumption
fuel–air ratio
power efficiency
propellant combustion
propellant consumption
propulsion system performance
propulsive efficiency
thermodynamic efficiency

combustion heat
USE **heat of combustion**

combustion instability
USE **combustion stability**

combustion physics
GS thermodynamics
. **combustion physics**
RT aerothermodynamics
combustible flow
combustion
combustion chemistry
Damkohler number
flame propagation
heat of combustion
ignition
∞ physics
plasmas (physics)
reaction-diffusion equations
∞ **science**
thermochemistry
turbulent combustion

combustion products
GS products
. reaction products
. . **combustion products**
RT air pollution
ashes
combustible flow
combustion
combustion chemistry
diluents
dust
exhaust gases
flue gases
fly ash
high temperature gases
odors
particulates
pollution transport
polycyclic aromatic hydrocarbons
rocket exhaust
smog
smoke
soot
vapors
wastes

combustion stability
UF *acoustic combustion*
chugging
combustion instability
GS dynamic characteristics
. dynamic stability
. . **combustion stability**
. . . flame stability
stability
. dynamic stability
. . **combustion stability**
. . . flame stability
RT axial modes
burning rate
combustion
combustion chemistry
fuel combustion
motion stability
pressure oscillations
propellant combustion
smoldering
solid propellant combustion
thermal instability
turbulent combustion
velocity coupling

combustion synthesis
(added April 1993)
RT annealing
cermets
combustion
combustion chemistry
exothermic reactions
functionally gradient materials
powder metallurgy
sintering

combustion temperature
GS temperature
. **combustion temperature**
RT combustion
erosive burning
flame temperature
flash point
ignition temperature
operating temperature
spontaneous combustion

combustion vibration
GS vibration
. **combustion vibration**
RT combustion
elastic waves
structural stability

combustion waves
USE **flame propagation**

combustion wind tunnels
GS test facilities

. wind tunnels
. . **combustion wind tunnels**
RT hypersonic wind tunnels
hypervelocity wind tunnels

combustors
USE **combustion chambers**

Comet 4 aircraft
UF *de Havilland DH 106 aircraft*
DH 106 aircraft
GS commercial aircraft
. **Comet 4 aircraft**
de Havilland aircraft
. **Comet 4 aircraft**
Hawker Siddeley aircraft
. **Comet 4 aircraft**
jet aircraft
. **Comet 4 aircraft**
monoplanes
. **Comet 4 aircraft**
passenger aircraft
. **Comet 4 aircraft**
RT ∞ aircraft

comet heads
GS celestial bodies
. **comet heads**
RT ∞ coma
cometary atmospheres
solar system

comet nuclei
GS celestial bodies
. **comet nuclei**
RT ∞ coma
cometary atmospheres
Oort cloud
Rosetta mission
solar system

Comet Rendezvous Asteroid Flyby Mission
(added November 1988)
UF *CRAF mission*
GS space missions
. asteroid missions
. . **Comet Rendezvous Asteroid Flyby Mission**
. flyby missions
. . **Comet Rendezvous Asteroid Flyby Mission**
RT Mariner Mark 2 Spacecraft
∞ missions
NASA space programs
Near Earth Asteroid Rendezvous Mission
Rosetta mission

comet tails
GS celestial bodies
. **comet tails**
RT ∞ coma
cometary atmospheres
Grigg–Skjellerup comet
radiation pressure
solar system
solar wind

cometary atmospheres
DEF The region of the coma of a comet as well as the gaseous part surrounding the coma that often is a hydrogen atmosphere that contains particulate matter.
RT astronomical photometry
∞ atmospheres
∞ coma
comet heads
comet nuclei
comet tails
cometary magnetospheres
comets
ionopause

cometary collisions
(added June 1994)
GS collisions
. **cometary collisions**
RT asteroid collisions
craters
Cretaceous–Tertiary boundary
hypervelocity impact
meteorite collisions
shatter cones
Shoemaker–Levy 9 comet

cometary magnetospheres
(added September 1988)
RT cometary atmospheres
comets
. magnetospheres

comets
DEF Luminous members of the solar system composed of a head, or coma, and often with a spectacular gaseous tail extending a great distance from the head.
GS celestial bodies
. **comets**
. . Arend–Roland comet
. . Austin comet
. . Brorsen–Metcalf comet
. . Encke comet
. . Giacobini–Zinner comet
. . Grigg–Skjellerup comet
. . Halley's comet
. . Humason comet
. . IRAS–Araki–Alcock comet
. . Kohoutek comet
. . Morehouse comet
. . Mrkos comet
. . Okazaki–Levy–Rudenko comet
. . Schwassmann–Wachmann comet
. . Shoemaker–Levy 9 comet
. . Tempel 2 comet
. . West comet
RT Bessel–Bredichin theory
∞ coma
cometary atmospheres
cometary magnetospheres
Kuiper belt
meteoroid showers
meteoroids
Oort cloud
solar system

comfort
RT acoustics
air conditioning
efficiency
environmental engineering
glare
human factors engineering
humidity
illuminating
∞ performance
physiological effects
psychological effects
reward (psychology)
riding quality
seats
temperature
ventilation

command and control
UF *command–control*
RT ∞ automation
autonomy
AWACS aircraft
∞ commands
∞ control
decision making
E–2 aircraft
E–3A aircraft
E–4A aircraft
ground support equipment
logistics
management
surveillance
targets

command guidance
DEF The guidance of a spacecraft or rocket by means of electronic signals sent to receiving devices in the vehicle. Used for command systems.
UF *command systems*
GS guidance (motion)
. **command guidance**
RT ∞ commands
ground support equipment
injection guidance
midcourse guidance
rendezvous guidance
rendezvous spacecraft
spacecraft guidance
terminal guidance

command languages
DEF Vocabularies to interactively execute activities such as computer retrieval or input.
GS languages
. **command languages**
. . query languages
RT human–computer interface
information retrieval

command modules
GS compartments
. **command modules**
modules
. spacecraft modules
. . **command modules**
spacecraft components
. spacecraft modules
. . **command modules**
RT Apollo spacecraft
∞ commands
Marquardt R4D engine
service modules
spacecraft docking modules
spacecrew transfer

command service modules
UF *CSM*
GS modules
. spacecraft modules
. . **command service modules**
spacecraft components
. spacecraft modules
. . **command service modules**
RT Apollo project
lunar orbits
manned spacecraft
Skylab 1
Skylab 2
Skylab 3
Skylab 4
spacecraft docking modules

command systems
USE **command guidance**

command–control
USE **command and control**

Commando aircraft
USE **C–46 aircraft**

∞ **commands**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT autonomy
command and control
command guidance
command modules
decisions

commerce
RT commercial spacecraft
consumption
costs
economic development
finance
gross national product
industrial areas
industries
∞ investment
liabilities
losses
manufacturing
market research
marketing
PERT
product development
project management
risk
supplying

commerce lab
RT government/industry relations
∞ microgravity applications
mission planning
space commercialization
Space Shuttle payloads
user requirements

commercial aircraft
UF *commercial aviation*
GS **commercial aircraft**
. Boeing 707 aircraft
. Boeing 720 aircraft
. Boeing 727 aircraft
. Boeing 733 aircraft
. Boeing 737 aircraft
. Boeing 747 aircraft
. Boeing 757 aircraft
. Boeing 767 aircraft
. Boeing 777 aircraft
. Comet 4 aircraft
. CV–340 aircraft
. CV–440 aircraft
. CV–880 aircraft
. CV–990 aircraft
. DC 3 aircraft
. DC 7 aircraft
. DC 8 aircraft
. DC 9 aircraft
. DC 10 aircraft
. DH 121 aircraft
. DO–328 aircraft
. Electra aircraft
. European Airbus
. . A–300 aircraft
. . A–310 aircraft
. . A–320 aircraft
. . A–330 aircraft
. . A–340 aircraft
. F–28 transport aircraft
. IL–62 aircraft
. Jetstream aircraft
. L–1011 aircraft
. Lear jet aircraft
. light transport aircraft
. MD 11 aircraft
. MD 80 aircraft
. P–160 aircraft
. SE–210 aircraft
. supersonic commercial air transport
. . Boeing 2707 aircraft
. . TU–144 aircraft
. TU–104 aircraft
. TU–124 aircraft
. TU–134 aircraft
. TU–154 aircraft
. TU–204 aircraft
. VC–10 aircraft
RT air transportation
∞ aircraft
airline operations
cargo aircraft
civil aviation
commuter aircraft
EH–101 helicopter
general aviation aircraft
ground effect machines
jet aircraft
passenger aircraft
rotary wing aircraft
supersonic transports
transport aircraft
utility aircraft
V/STOL aircraft
water takeoff and landing aircraft

commercial aviation
USE **civil aviation**
commercial aircraft

commercial energy
RT allocations
distributing
domestic energy
economic factors
∞ energy
energy consumption
energy conversion
industrial energy
transportation energy

commercial spacecraft
DEF Commercial satellites and other spacecraft operated by the private sector.
GS **commercial spacecraft**
. RCA Satcom satellites
RT aerospace industry
aerospace vehicles
commerce
communication satellites
industries
space commercialization
space industrialization
space manufacturing
space processing

commercialization
(added March 1997)
GS **commercialization**
. space commercialization
RT government/industry relations
marketing
product development
technology transfer

comminution
UF *attrition (materials)*
GS **comminution**
. crushing
. grinding (comminution)
. shredding
RT atomizing
beneficiation
chipping
colloiding
crushers
cutting
disintegration
flaking
fragmentation
gas atomization
grinding mills
metal powder
∞ milling
particle production
powder metallurgy
∞ reduction

Committee on Space Research
UF *COSPAR (committee)*
RT ∞ aerospace sciences
conferences
European space programs
international cooperation
NASA programs
programs

commodities
RT government procurement
manufacturing
market research
procurement management
products

Common Business Oriented Language
USE **Cobol**

commonality
DEF The factors which are common in equipment or systems.
GS standardization
. **commonality**
RT aircraft equipment
cost reduction
efficiency
equipment specifications
ground support systems
spacecraft components
specifications

Commonwealth of Independent States
(added September 1993)
UF *CIS*
RT Asia
Europe
nations
Russian Space Program

communicating
GS **communicating**
. aircraft communication
. electrocutaneous communication
. ground–air–ground communication
. information dissemination
. . messages
. . selective dissemination of information
. interstellar communication
. lip reading
. point to point communication
. . NASCOM network
. underground communication
. verbal communication

. . conversation
RT color television
computer conferencing
crosstalk
education
frequency assignment
information
information flow
information management
message processing
Morse code
stereotelevision
systems engineering
TDR satellites
technology transfer
telecommunication

communication
GS telecommunication
. **communication**
. . facsimile communication
. . . automatic picture transmission
. . line of sight communication
. . optical communication
. . ship to shore communication
. . underwater communication
. . voice communication
. . . telephony
RT computer conferencing
information
information flow
information management
Marisat satellites
message processing
spread spectrum transmission
technology transfer

communication cables
GS transmission lines
. **communication cables**
. . coaxial cables
RT cable television
∞ cables
electric wire
optical fibers
submarine cables
waveguides

communication equipment
GS **communication equipment**
. Advanced Vidicon Camera System (AVCS)
. closed circuit television
. diplexers
. interphones
. PLAT system
. radio receivers
. . superheterodyne receivers
. . transmitter receivers
. . whistler recorders
. spacecraft television
. . digital spacecraft television
. . Ranger block 3 television system
. . satellite television
. stereotelevision
RT antenna components
biotelemetry
color television
Earth terminals
educational television
∞ equipment
furlable antennas
high definition television
inertialess steerable antennas
information adaptive system
logarithmic receivers
matched filters
orbiting dipoles
P.A.C.M. telemetry
pulse frequency modulation
pulse frequency modulation telemetry
radio communication
radio equipment
radio relay systems
radio telegraphy
radio telemetry
spherical antennas
telemetry
telephony
television systems
unified S band

communication networks
DEF Organization of facilities for the rapid reception of, transmission of, and/or relaying of electrical impulses for reproduction as printed messages, pictures, or other data.
GS networks
. **communication networks**
. . Aloha system
. . Deep Space Network
. . internets
. . . ARPA computer network
. . . World Wide Web
. . local area networks
. . NASCOM network
. . VSAT (network)
. . wide area networks
RT access control
asynchronous transfer mode
broadcasting
data links
defense communications system (DCS)
demand assignment multiple access
electronic bulletin boards
electronic mail
frequency division multiplexing
network control
packet switching
packets (communication)
protocol (computers)
pulse communication
radio communication
satellite constellations
satellite networks
telecommunication

communication satellites
DEF Satellites designed to reflect or relay electromagnetic signals used for communication.
GS artificial satellites
. **communication satellites**
. . ACTS
. . aeronautical satellites
. . . Aerosat satellites
. . Arcomsat
. . Communications Technology Satellite
. . . ComStar C
. . . NATO 3B satellite
. . ComStar satellites
. . direct broadcast satellites
. . European Communications Satellite
. . Intelsat satellites
. . low frequency transionospheric satellites
. . L-Sat
. . Marecs maritime satellites
. . Marots (ESA)
. . Molniya satellites
. . MSAT
. . Palapa satellites
. . . Palapa 2 satellite
. . Raduga satellite
. . RCA Satcom satellites
. . Relay satellites
. . . Relay 1 satellite
. . . Relay 2 satellite
. . Symphonie satellites
. . SYNCOM satellites
. . . Early Bird satellites
. . . SYNCOM 1 satellite
. . . SYNCOM 2 satellite
. . . SYNCOM 3 satellite
. . . SYNCOM 4 satellite
. . Westar satellites
RT Advent Project
ATS
carrier to noise ratios
commercial spacecraft
Comsat program
Defense Communications Satellite System
demand assignment multiple access
domestic satellite communications systems
downlinking
Earth terminal measurement system
Echo project
electronic mail
Fleet Satellite Communication System
geophysical satellites
ground-air-ground communication
HET experiment
Indian space program
INMARSAT satellites
land mobile satellite service
mobile communication systems
network control
orbit spectrum utilization
passive satellites
radio relay systems
satellite communication
satellite constellations
satellite networks
Skynet satellites
space commercialization
space communication
Synchronous Communications Satellite Proj
Synchronous Meteorological Satellite
synchronous platforms
synchronous satellites
telecommunication
teleconferencing
Telstar project
unmanned spacecraft
uplinking
wireless communication

communication systems
USE **telecommunication**

communication theory
UF *statistical communication theory*
RT cross coupling
cybernetics
data transmission
high level languages
information theory
intelligibility
languages
lattices (mathematics)
messages
network synthesis
random noise
random processes
redundancy
semantics
sentences
signal to noise ratios

switching theory
∞ theories

Communications Technology Satellite
UF *Hermes satellite*
GS artificial satellites
. communication satellites
. . **Communications Technology Satellite**
. . . ComStar C
. . . NATO 3B satellite
RT Canada
Canadian space program
international cooperation
NASA programs
synchronous satellites
technology assessment
technology utilization

communities
GS **communities**
. inhabitants
. . mountain inhabitants
RT cities
demography
ethnic factors
integrated energy systems
megalopolises
minorities
Modular Integrated Utility System
nations
police
politics
regimes
sociology
Starsite program
United Nations
urban development
urban planning
urban research

commutation
DEF Sequential sampling, on a repetitive timesharing basis, of multiple data sources for transmitting or recording, or both, on a single channel.
RT commutators
interpolation
switching theory

commutators
DEF Devices used to accomplish time division multiplexing by repetitive sequential switching.
GS **commutators**
. decommutators
RT armatures
commutation
distributors
electric contacts
electric motors
∞ rotating electrical machines
rotating generators

commuter aircraft
(added October 1988)
GS passenger aircraft
. **commuter aircraft**
. . ATR-72 aircraft
RT air transportation
∞ aircraft
commercial aircraft
general aviation aircraft

compact disk read-only memory devices
USE **optical disks**

compact galaxies
(added November 1988)
GS celestial bodies
. galaxies
. . **compact galaxies**
RT galactic structure

compacting
RT agglomeration
cold pressing
densification
hot isostatic pressing
hot pressing
powder metallurgy
presses
∞ pressing
pressing (forming)
vibration

compactness
USE **void ratio**

companding
DEF A process in which compression is followed by expansion, as in noise reduction systems.
RT frequency modulation
modulation
radio transmission
signal processing
signal to noise ratios

companion stars
GS celestial bodies
. stars
. . double stars
. . . binary stars
. . . . **companion stars**
. . . . . Nemesis (star)
RT brown dwarf stars
parallax
stellar motions
triple stars
variable stars
visual observation
x ray binaries

comparator circuits
GS circuits
. **comparator circuits**
RT clipper circuits
delay circuits
discrimination
time discrimination

comparators
DEF In computer operations, devices or circuits for comparing information from two sources.
GS measuring instruments
. **comparators**
RT discriminators
error signals
harmonic generators
monochromators
reflectometers

comparison
RT analogies
cost analysis
economic analysis
estimates
evaluation
examination
matching
pattern registration
ranking

compartmentation
USE **compartments**

compartments
UF *compartmentation*
GS **compartments**
. air locks
. aircraft compartments
. command modules
. pressurized cabins
. spacecraft cabins
. test chambers
. . anechoic chambers
. . pressure chambers
. . . hyperbaric chambers
. . . vacuum chambers
. . reverberation chambers
RT bays (structural units)
∞ cells
crew experiment stations
crew observation stations
crew workstations
enclosures
modules
rooms
spacecraft modules

COMPASS (programming language)
GS languages
. programming languages
. . Assembly language
. . . **COMPASS (programming language)**
RT compilers
computer programming

compasses
DEF Instruments for indicating a horizontal reference direction, specifically, magnetic compasses.
GS measuring instruments
. indicating instruments
. . **compasses**
. . . gyrocompasses
. . . magnetic compasses
. . . solar compasses
navigation aids
. navigation instruments
. . **compasses**
. . . gyrocompasses
. . . magnetic compasses
. . . solar compasses
RT aircraft instruments
beacons
buoys
flight instruments
radar beacons
radio direction finders
transits

compatibility
DEF A characteristic ascribed to a major subsystem that indicates it functions well in the overall system. Also applied to the overall system with reference to how well its various subsystems work together, as in 'the vehicle has good compatibility.' Also applied to materials which can be used in conjunction with other materials and not react with each other under normal operating conditions.
GS **compatibility**
. biocompatibility
. chemical compatibility
. electromagnetic compatibility
. systems compatibility
RT acceptability
affinity

conventions
permissivity
stability
suitability
versatility

∞ **compensation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT allowances
errors
image motion compensation
instrument compensation
temperature compensation
transient response

compensators
RT balance
bias
compulsators
error signals
feedback
loop transfer recovery
video equipment

compensatory tracking
GS tracking (position)
. **compensatory tracking**
RT infrared tracking
optical tracking
radar tracking

competition
RT athletes
human performance
human reactions
physical fitness

compilation (computers)
USE **compilers**

compiler programs
USE **compilers**

compilers
SN (PROGRAM-MAKING ROUTINES FOR DIGITAL COMPUTERS)
UF *compilation (computers)*
compiler programs
GS computer programs
. **compilers**
RT assembler routines
autocoders
C (programming language)
collating
COMPASS (programming language)
computer program integrity
computer systems programs
data conversion routines
disk operating system (DOS)
FORTRAN
operating systems (computers)
parsing algorithms
Pascal (programming language)
PL/1
programmed instruction
subroutines

∞ **complement**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF An angle equal to 90 deg. minus a given angle. The true complement of any quantity in positional notation, i.e. the quantity which, when added to the first quantity, gives the least quantity containing one more place. The base-minus-one complement of any quantity in positional notation, i.e., the quantity which when added to the first quantity containing the same number of places.
RT complement (biology)
complements (mathematics)
personnel

complement (biology)
RT ∞ biology
∞ complement
hemolysis

complementary metal oxide semiconductors
USE **CMOS**

complements (mathematics)
RT angles (geometry)
∞ complement
∞ logic

completeness
RT achievement
computer program integrity
integrity

complex compounds
DEF Chemical compounds in which part of the molecular bonding is of the coordinate type.
RT ∞ chemical compounds
molecular structure
transition metals

complex numbers
RT geometry
integers
∞ numbers
real numbers

complex systems
RT parameter identification
reliability engineering
system identification
∞ systems
systems analysis

complex variables
GS analysis (mathematics)
. **complex variables**
. . Airy function
. . analytic functions
. . . entire functions
. . Bessel functions
. . . Hankel functions
. . Cauchy integral formula
. . conformal mapping
. . conjugates
. . . conjugate points
. . exponential functions
. . . logarithms
. . gamma function
. . harmonic functions
. . hyperbolic functions
. . hypergeometric functions
. . Laguerre functions
. . Legendre functions
. . Liouville theorem
. . Mathieu function
. . meromorphic functions
. . . elliptic functions
. . . rational functions
. . nonholonomic equations
. . orthogonal functions
. . . Walsh function
. . Schwarz-Christoffel transformation
. . singularity (mathematics)
. . . naked singularities
. . spherical harmonics
RT aperiodic functions
complexity
dependent variables
Euler-Cauchy equations
functional analysis
Joukowski transformation
maximum principle
real variables
Schauder fixpoint theorem
stability derivatives
Theodorsen transformation
uniqueness theorem
∞ variable

complexity
UF *complication*
GS **complexity**
. task complexity
RT complex variables
feedback
∞ performance
statistical distributions

compliance (elasticity)
USE **modulus of elasticity**

complication
USE **complexity**

component reliability
GS reliability
. **component reliability**
RT aircraft reliability
circuit reliability
cumulative damage
process control (industry)
quality control
retirement for cause
spacecraft reliability
structural reliability
systems health monitoring

∞ **components**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF An article which is a self-contained element of a complete operating unit and performs a function necessary to the operation of that unit. Used for parts.
UF *parts*
RT accessories
antenna components
assemblies
computer components
content
engine parts
fractions
ingredients
missile components
modules
redundant components
segments
spacecraft components
spare parts
structural members
subassemblies

composite functions
GS analysis (mathematics)
. real variables
. . **composite functions**
functions (mathematics)
. **composite functions**

composite materials
DEF Structural materials of metals, ceramics, or plastics with built-in strengthening agents which may be in the form of filiments, foils, powders, or flakes of a different compatible material. Used for composites and pyrographalloy.
UF *composites*

pyrographaloy
GS **composite materials**
. Boral
. boron reinforced materials
. . aluminum boron composites
. . boron–epoxy composites
. carbon–carbon composites
. ceramic matrix composites
. cermets
. composite propellants
. fiber composites
. . aramid fiber composites
. . braided composites
. . carbon fiber reinforced plastics
. . . carbon–phenolic composites
. . glass fiber reinforced plastics
. . woven composites
. functionally gradient materials
. glassy carbon
. hybrid composites
. metal matrix composites
. . aluminum boron composites
. . aluminum graphite composites
. . Borsic (tradename)
. . eutectic composites
. particulate reinforced composites
. plywood
. polymer matrix composites
. . epoxy matrix composites
. . . boron–epoxy composites
. . . graphite–epoxy composites
. . graphite–polyimide composites
. . reinforced plastics
. . . carbon fiber reinforced plastics
. . . . carbon–phenolic composites
. . . glass fiber reinforced plastics
. . . micarta
. resin matrix composites
. . boron–epoxy composites
. . carbon–phenolic composites
. . graphite–epoxy composites
. superhybrid materials
. . graphite–epoxy composites
. three dimensional composites
. whisker composites
RT aircraft construction materials
airframe materials
aramid fibers
bimetals
boron fibers
carbon fibers
chemical vapor infiltration
cladding
coatings
∞ construction materials
E glass
fiber orientation
fiber pullout
fiber volume fraction
fiber–matrix interfaces
fibers
insulation
interlaminar stress
laminates
lay–up
low density research
∞ materials
∞ matrices
matrix materials
metals
micromechanics
mixtures
modular ratios
monotectic alloys
multilayer insulation
ply orientation
powder metallurgy
preforms
prepregs
reinforcement (structures)
reinforcing fibers
reinforcing materials
resin film infusion
resin transfer molding
rigid structures
∞ rovings
S glass
sandwich structures
sheet molding compounds
solid suspensions
spiral wrapping
stacking sequence (composite materials)
thermosetting resins

composite propellants
DEF Solid rocket propellants consisting of a fuel and an oxidizer neither of which would burn without the presence of the other.
GS composite materials
. **composite propellants**
propellants
. solid propellants
. . **composite propellants**
RT case bonded propellants
double base propellants
double base rocket propellants
explosives
fuel production
plastic propellants
plastisols
polysulfides
polyurethane resins
propellant additives
propellant binders
solid rocket propellants

composite structures
GS **composite structures**
. laminates
. . Boral
. . plywood
RT boron–epoxy composites
ceramic matrix composites
functionally gradient materials
glass fiber reinforced plastics
honeycomb cores
honeycomb structures
hybrid structures
lay–up
pultrusion
resin film infusion
sheet molding compounds
smart structures
steel structures
∞ structures

composite wrapping
RT ceramic fibers
fiber composites
filament winding
isotensoid structures
spiral wrapping
∞ wrap

composites
USE **composite materials**

∞ **composition**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT composition (property)
content
formulations
ingredients
stoichiometry

composition (property)
GS **composition (property)**
. atmospheric composition
. . atmospheric moisture
. . ionospheric composition
. body composition (biology)
. chemical composition
. . carbon dioxide concentration
. . stellar composition
. concentration (composition)
. . atom concentration
. . carbon dioxide concentration
. . fiber volume fraction
. . low concentrations
. . mascons
. . meteoroid concentration
. . moisture content
. . . atmospheric moisture
. gas composition
. . carbon dioxide concentration
. isotope ratios
. lunar composition
. meteoritic composition
. planetary composition
. plasma composition
RT ∞ composition
gradients
Henry law
lumping
mixtures
Raoult law
solutions
stoichiometry

composting
GS disposal
. waste disposal
. . **composting**
management
. waste management
. . waste disposal
. . . **composting**
RT garbage
metabolic wastes
shredding
solid wastes
waste treatment
waste utilization

compound A
GS **halogen compounds**
. fluorine compounds
. . fluorides
. . . **compound A**
. **halides**
. . fluorides
. . . **compound A**
RT ∞ chemical compounds

compound helicopters
GS V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **compound helicopters**
. . . . S–67 helicopter
RT aeronautical engineering
air transportation
∞ aircraft
aircraft configurations
aircraft design
helicopter design
short takeoff aircraft
vertical takeoff aircraft

compounding
UF *milling (mixing)*
GS mixing
. **compounding**
RT colloiding
dissolving
grinding (comminution)
homogenizing
∞ milling

∞ **compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ chemical compounds
potting compounds

compressed air
GS gases
. gas mixtures
. . air
. . . **compressed air**
mixtures
. solutions
. . gas mixtures
. . . air
. . . . **compressed air**
RT compressors
drills
energy storage
man operated propulsion systems
oxygen supply equipment
pneumatic equipment
∞ pumping

compressed gas
DEF Any gaseous materials or mixtures having a container pressure exceeding 40 psi at 70 degrees F, or 104 psi at 130 degrees F. Compressed gases are further defined as flammable or nonflammable.
GS gases
. **compressed gas**
. . high pressure oxygen
RT compressors
gas pressure
pneumatic control

compressed video
USE **video compression**

compressibility
DEF The property of a substance, as air, by virtue of which its density increases with increase in pressure.
GS mechanical properties
. **compressibility**
RT bulk modulus
compressible flow
compressive strength
density (mass/volume)
equations of state
Grueisen constant
hydroelasticity
incompressibility
metal powder
porosity
powder (particles)

compressibility effects
RT buffeting
compressible flow
∞ effects
flutter
heat transfer
oscillating flow
pressure effects
relaxation (physiology)
secondary flow
supersonic flow
transonic flow

compressible boundary layer
GS boundary layers
. **compressible boundary layer**
RT laminar boundary layer
three dimensional boundary layer
turbulent boundary layer

compressible flow
DEF In aerodynamics, flow at speeds sufficiently high that density changes in the fluid cannot be neglected.
GS fluid flow
. **compressible flow**
. . transonic flow
RT aerodynamics
air flow
Cartan space
compressibility
compressibility effects
Crocco method
gas flow
Hugoniot equation of state
hypersonic flow
incompressible flow
magnetohydrodynamic flow
Newton pressure law
stagnation flow
stagnation pressure
stagnation temperature
subsonic flow
supersonic flow

compressible fluids
RT aerodynamic heating
Crocco method
fluid power
∞ fluids
hydroelasticity
ideal fluids
incompressible fluids
Maxwell fluids
method of characteristics
P waves
superfluidity

compressing
UF *recompression*
squeezing
GS **compressing**
. plasma compression
. speech baseband compression
RT adiabatic conditions
anvils
axial compression loads
blowing
compressors
concentrating
densification
internal compression inlets
magnetic compression
mechanical properties
metal powder
piston theory
∞ pressing
pressure
pressure reduction
pulse compression
∞ pumping
rarefaction
squeeze casting
superchargers

compression loads
GS loads (forces)
. **compression loads**
. . axial compression loads
. . impact loads
RT aerodynamic loads
axial loads
buckling
compressive strength
contact loads
dynamic loads
edge loading
mechanical properties
shock loads
static loads
structural design criteria
thrust loads

compression ratio
DEF In internal combustion engines, the ratio between the volume displaced by the piston plus the clearance space, to the volume of the clearance space.
GS ratios
. **compression ratio**
RT efficiency
fuel–air ratio

compression testers
USE **compression tests**

compression tests
UF *compression testers*
meteorite compression tests
RT creep tests
destructive tests
hardness tests
impact tests
load tests
∞ materials tests
static tests
∞ tests

compression waves
DEF In acoustics, waves in an elastic medium which cause an element of the medium to change its volume without undergoing rotation. Mathematically, a compression wave is one whose velocity wave has zero curl.
GS elastic waves
. **compression waves**
RT P waves

compressive strength
DEF The maximum load sustained by a standard specimen of a material when subjected to a crushing force.
GS mechanical properties
. **compressive strength**
RT compressibility
compression loads
ductility
elastic properties
fiber strength
high strength
load carrying capacity
Poisson ratio
resilience
shear strength
∞ strength
toughness

compressor blades
DEF Blades which are either rotor blades or stator blades in axial–flow compressors; sometimes used restrictively (and ambiguously) for compressor rotor blades.
GS turbomachine blades
. **compressor blades**
RT ∞ blades
centrifugal compressors

fan blades
rotating stalls
rotor blades (turbomachinery)
stator blades
turbine blades
turbocompressors
vanes

compressor efficiency
GS efficiency
. **compressor efficiency**
RT power efficiency
thermodynamic efficiency

compressor rotors
GS rotating bodies
. rotors
. . **compressor rotors**
RT centrifugal compressors
compressors
∞ fans
impellers
rotor blades (turbomachinery)
turbine wheels
turbocompressors

compressors
SN (EXCLUDES DATA COMPRESSORS)
DEF Machines for compressing air or other fluids.
GS **compressors**
. centrifugal compressors
. superchargers
. supersonic compressors
. transonic compressors
. turbocompressors
RT air conditioning equipment
blowers
compressed air
compressed gas
compressing
compressor rotors
condensers (liquefiers)
coolers
∞ fans
refrigerating machinery
stators
turbomachinery
vacuum pumps
vaneless diffusers

Compton effect
DEF The decrease in frequency and increase in wavelength of x rays or gamma rays when scattered by free electrons.
GS scattering
. **Compton effect**
RT coherent scattering
∞ effects
inelastic scattering
nuclear reactions
photoelectricity

Compton Gamma Ray Observatory
USE **Gamma Ray Observatory**

compulsators
DEF Compensated pulsed alternators, i.e., single phased alternators designed for pulsed power duty with air gap armature windings and air gap compensating windings.
RT AC generators
compensators
electric power supplies
pulse generators

computation
UF *calculation*
GS **computation**
. computational geometry
. orbit calculation
. . minimum variance orbit determination
RT addition
∞ applications of mathematics
arithmetic
calculators
computational astrophysics
computational electromagnetics
computational fluid dynamics
computers
data processing
data reduction
dividing (mathematics)
flux vector splitting
∞ formulas
ill-conditioned problems (mathematics)
interpolation
linear prediction
multiplication
subtraction
sums
systolic arrays

computational aerodynamics
USE **computational fluid dynamics**

computational astrophysics
GS analysis (mathematics)
. numerical analysis
. . **computational astrophysics**
astrophysics
. **computational astrophysics**
RT computation
computerized simulation
mathematical models
∞ science

computational chemistry
DEF A complementary method for determining properties of gases, solids, and their interactions from first principle calculations. It extends testing capabilities to realms that are too dangerous or too costly to obtain experimentally.
GS analysis (mathematics)
. numerical analysis
. . **computational chemistry**
RT ∞ chemistry
computer techniques
computerized simulation
configuration interaction
physical chemistry
self consistent fields
∞ tests

computational electromagnetics
(added March 1995)
GS analysis (mathematics)
. numerical analysis
. . **computational electromagnetics**
RT computation
computational fluid dynamics
electromagnetism
parallel processing (computers)
radar cross sections

computational fluid dynamics
DEF The application of large computer systems for the numerical solutions of complex fluid dynamics equations.
UF *computational aerodynamics*
GS analysis (mathematics)
. numerical analysis
. . **computational fluid dynamics**
fluid mechanics
. fluid dynamics
. . **computational fluid dynamics**
RT Baldwin–Lomax turbulence model
BGK model
Burnett equations
computation
computational electromagnetics
convection–diffusion equation
direct numerical simulation
∞ dynamics
equations of motion
finite element method
flow deflection
flow equations
flux difference splitting
flux vector splitting
grid generation (mathematics)
hydrodynamic coefficients
interactional aerodynamics
k–epsilon turbulence model
k–omega turbulence model
large eddy simulation
multiblock grids
multigrid methods
Navier–Stokes equation
numerical flow visualization
panel method (fluid dynamics)
relaxation method (mathematics)
Reynolds averaging
spectral methods
structured grids (mathematics)
turbulence models
TVD schemes
unstructured grids (mathematics)
upwind schemes (mathematics)
vortex in cell technique
vortex lattice method

computational geometry
(added August 1988)
GS computation
. **computational geometry**
geometry
. **computational geometry**
RT computer aided design

computational grids
UF *grids (mathematics)*
mesh (mathematics)
GS coordinates
. **computational grids**
. . structured grids (mathematics)
. . . multiblock grids
. . unstructured grids (mathematics)
RT grid generation (mathematics)
∞ grids
mathematical models
multigrid methods
numerical analysis
problem solving
three dimensional models

computer aided design
DEF The use of the computer in design work. Used for CAD (design), computer aided engineering, and computerized design.
UF *CAD (design)*
computer aided engineering
computerized design
GS computer techniques
. **computer aided design**
. . IPAD
RT aircraft design
amplifier design
computational geometry
computer graphics

computerized simulation
∞ design
drafting machines
engine design
helicopter design
human–computer interface
lens design
lofting
logic design
missile design
multidisciplinary design optimization
reactor design
robotics
satellite design
spacecraft design
structural design
structured programming
three dimensional models

computer aided engineering
USE **computer aided design**

computer aided manufacturing
DEF Interactive computing in support of manufacturing. Used for CAM (manufacturing).
UF *CAM (manufacturing)*
GS computer techniques
. **computer aided manufacturing**
manufacturing
. **computer aided manufacturing**
RT computer graphics
computerized simulation
robotics

computer aided mapping
DEF Creating data bases of topographic and man–made features for the production of traditional maps and digital maps. Resultant digital maps have great flexibility and can be easily updated. The user can select the appropriate scale, view selected features, and view any desired area.
GS computer techniques
. **computer aided mapping**
mapping
. **computer aided mapping**
RT computer graphics
computerized simulation
maps
robotics

computer aided tomography
UF *CAT scanner*
GS computer techniques
. **computer aided tomography**
imagery
. radiography
. . tomography
. . . **computer aided tomography**
RT computer graphics
image processing

computer animation
GS arts
. graphic arts
. . animation
. . . **computer animation**
computer graphics
. **computer animation**
computer techniques
. **computer animation**
RT computerized simulation
motion pictures

computer architecture
USE **architecture (computers)**

computer assisted instruction
DEF The use of a computer to present instructional material and to accept and evaluate student responses.
UF *CAI*
GS computer techniques
. **computer assisted instruction**
education
. programmed instruction
. . **computer assisted instruction**
RT language programming
symbolic programming

computer bulletin boards
USE **electronic bulletin boards**

computer codes
USE **computer programs**

computer compatible tapes
DEF Machine readable tapes.
GS computer components
. computer storage devices
. . **computer compatible tapes**
magnetic tapes
. **computer compatible tapes**
RT computers
data processing equipment
digital computers
∞ tapes

computer components
GS **computer components**
. adding circuits
. central processing units
. . arithmetic and logic units
. . RISC processors
. chips (memory devices)
. comp ter storage devices
. . bubble memory devices
. . buffer storage
. . computer compatible tapes
. . cryogenic computer storage
. . delay lines (computer storage)
. . magnetic disks
. . magnetic drums
. . optical disks
. . random access memory
. . . core storage
. . read–only memory devices
. . . CD–ROM
. . registers (computers)
. . . accumulators (computers)
. microprocessors
. . Intel 8080 microprocessor
. peripheral equipment (computers)
. . printers (data processing)
. . remote consoles
. shift registers
RT architecture (computers)
binary to decimal converters
∞ components
computers
consoles
control units (computers)
counters
decimal to binary converters
digital electronics
firmware
logical elements
remote consoles

computer conferencing
(added September 1993)
DEF A form of teleconferencing that allows one or more users to exchange messages on a computer network.
GS teleconferencing
. **computer conferencing**
RT communicating
communication
electronic bulletin boards
electronic mail
electronic publishing
World Wide Web

computer design
SN (DESIGN OF COMPUTERS—EXCLUDES COMPUTERIZED DESIGN AND SYSTEMS ENGINEERING)
RT architecture (computers)
chips (electronics)
computers
∞ design
fluid logic
hardware description languages
logic design
memory (computers)
microprocessors
MIMD (computers)
optical computers
product development
read–only memory devices
SIMD (computers)

computer graphics
DEF The technique of combining computer calculations with various display devices, printers, plotters, etc. to render information in graphical or pictorial format. Used for interactive graphics.
UF *interactive graphics*
GS **computer graphics**
. computer animation
RT computer aided design
computer aided manufacturing
computer aided mapping
computer aided tomography
computers
data processing terminals
display devices
graphical user interface
IBM personal computers
Macintosh personal computers
multimedia
plotters
raster scanning
remote consoles
scientific visualization
tomography
windows (computer programs)

computer information security
DEF Protective measures to prevent destruction, larceny, and/or unauthorized use of information in computerized files. Used for computer security.
UF *computer security*
GS security
. **computer information security**
RT access control
computer viruses
cryptography
data processing
disk operating system (DOS)
information resources management
operating systems (computers)
privacy
selective dissemination of information

computer methods
USE **computer programs**

computer networks
DEF The interconnection of two or more computers for the mutual or individual processing of data to and from a multitude of terminals or

stations by utilizing appropriate switching techniques, transmission systems, or miniprocessors.
GS networks
. **computer networks**
. . internets
. . . ARPA computer network
. . . World Wide Web
. . client server systems
. . local area networks
. . wide area networks
RT Aloha system
distributed interactive simulation
distributed processing
electronic mail
interprocessor communication
network control
protocol (computers)
VSAT (network)

computer program integrity
DEF The completeness of a program to execute its intended function.
GS integrity
. **computer program integrity**
reliability
. software reliability
. . **computer program integrity**
RT compilers
completeness
computer viruses
computers
digital computers
errors
programs
redundancy
security

computer program reliability
USE **software reliability**

computer programming
UF *Legendre code*
GS **computer programming**
. assembler routines
. language programming
. logic programming
. microprogramming
. multiprogramming
. object-oriented programming
. on-line programming
. parallel programming
. structured programming
. symbolic programming
RT Ada (programming language)
addressing
ALGOL
algorithms
APL (programming language)
Assembly language
autocoders
BASIC (programming language)
batch processing
BCH codes
block diagrams
C (programming language)
coding
COMPASS (programming language)
computer viruses
context free languages
data structures
digital techniques
expert systems
file maintenance (computers)
firmware
flow charts
formalism
format
Forth (programming language)
FORTRAN
HAL/S (language)
heuristic methods
kinoform
linear programming
LISP (programming language)
logic design
machine-independent programs
MAP (programming language)
MIMD (computers)
natural language (computers)
numerical analysis
Pascal (programming language)
PL/1
program verification (computers)
programmed instruction
programmers
∞ programming
programming environments
programming languages
Prolog (programming language)
real time operation
response time (computers)
reverse engineering
RISC processors
run time (computers)
sequential control
SIMD (computers)
software engineering
software reliability
software reuse
systems analysis
theorem proving
time sharing
UNIX (operating system)

computer programs
UF *computer codes*
computer methods
software (computers)
GS **computer programs**
. applications programs (computers)
. . NASTRAN
. compilers
. computer systems programs
. . assembler routines
. . input/output routines
. . operating systems (computers)
. . . disk operating system (DOS)
. . . UNIX (operating system)
. . subroutine libraries (computers)
. editing routines (computers)
. machine-independent programs
. merging routines
. multiple output programs
. object programs
. software development tools
. source programs
. subroutines
RT algorithms
Assembly language
batch processing
block diagrams
coding
computer viruses
computers
data conversion routines
data flow analysis
data processing
data transfer (computers)
digital computers
error detection codes
fixed point arithmetic
floating point arithmetic
Goddard Trajectory Determination System
IBM personal computers
instruction sets (computers)
intellectual property
laser guidance
machine translation
Macintosh personal computers
modularity
NASA Interactive Planning System
numerical control
on-line systems
programmed instruction
programming environments
programs
report generators
∞ routines
software engineering
software reliability
software reuse
structured programming
∞ translators
user manuals (computer programs)

computer security
USE **computer information security**

computer simulation
USE **computerized simulation**

computer storage devices
UF *machine storage*
GS computer components
. **computer storage devices**
. . bubble memory devices
. . buffer storage
. . computer compatible tapes
. . cryogenic computer storage
. . delay lines (computer storage)
. . magnetic disks
. . magnetic drums
. . optical disks
. . random access memory
. . . core storage
. . read-only memory devices
. . . CD-ROM
. . registers (computers)
. . . accumulators (computers)
RT acoustic delay lines
cards
central processing units
∞ channels
cryosar
∞ equipment
flip-flops
hole burning
magnetic storage
memory (computers)
microprocessors
optical memory (data storage)
parametrons
peripheral equipment (computers)
punched cards
punched tapes
random access
shift registers
∞ storage
thin films

computer systems design
GS systems engineering
. **computer systems design**
RT client server systems
concurrent processing
∞ design
disk operating system (DOS)
distributed processing

interprocessor communication
man machine systems
operating systems (computers)
peripheral equipment (computers)
programmable logic devices
read-only memory devices
relational data bases
software development tools
software engineering
∞ systems
virtual memory systems

computer systems performance
DEF The efficiency and reliability that characterize the real operation of the system.
RT consistency
data sampling
efficiency
evaluation
operator performance
output
∞ performance
performance tests
quality
reliability
response time (computers)
RISC processors
software reliability
∞ systems

computer systems programs
GS computer programs
. **computer systems programs**
. . assembler routines
. . input/output routines
. . operating systems (computers)
. . . disk operating system (DOS)
. . . UNIX (operating system)
. . subroutine libraries (computers)
RT algorithms
Assembly language
autocoders
compilers
computer viruses
computers
data flow analysis
data processing
digital computers
editing routines (computers)
error detection codes
report generators
∞ routines
software engineering
∞ systems
systems analysis

computer systems simulation
DEF Forecasting of computer requirements by the use of predictive modeling and estimating computer workloads.
GS simulation
. **systems simulation**
. . **computer systems simulation**
RT analog simulation
data processing equipment
digital simulation
hardware description languages
mathematical models
operations research
simulators
∞ systems
systems analysis

computer techniques
GS **computer techniques**
. computer aided design
. . IPAD
. computer aided manufacturing
. computer aided mapping
. computer aided tomography
. computer animation
. computer assisted instruction
RT adaptive optics
ARPA computer network
belief networks
computational chemistry
computers
decision support systems
flight management systems
knowledge based systems
management information systems
management methods
management systems
microprocessors
NASTRAN
numerical differentiation
on-line systems
parsing algorithms
personal computers
sorting algorithms
word processing

computer viruses
(added March 1989)
RT computer information security
computer program integrity
computer programming
computer programs
computer systems programs
software engineering

computer vision
DEF Capability of computers to analyze and act on visual input.
UF *machine vision*
RT artificial intelligence
∞ automation
edge detection
optical flow (image analysis)
pattern recognition
position sensing
robot sensors
robotics
robots

computerized control
USE **numerical control**

computerized design
USE **computer aided design**

computerized simulation
DEF Computer-calculated representation of a process, device, or concept in mathematical form. Used for ARIP (impact prediction), automatic rocket impact predictors, computer simulation, and IP (impact prediction).
UF *ARIP (impact prediction)*
automatic rocket impact predictors
computer simulation
IP (impact prediction)
GS simulation
computerized simulation
. . analog simulation
. . digital simulation
. . distributed interactive simulation
RT algorithms
altitude simulation
computational astrophysics
computational chemistry
computer aided design
computer aided manufacturing
computer aided mapping
computer animation
computers
control simulation
differential analyzers
flight simulation
highly maneuverable aircraft
hydraulic analogies
landing simulation
Lennard-Jones potential
mathematical models
∞ missile simulators
molecular dynamics
motion simulators
numerical flow visualization
numerical weather forecasting
operations research
scientific visualization
simulated annealing
systems simulation
target simulators
three dimensional models
two dimensional models
virtual reality

computers
GS data processing equipment
. **computers**
. . analog computers
. . . EAI 680 computer
. . . Honeywell 600/6000 computer
. . . SIGMA 5 computer
. . . Univac 1100 series computers
. . . . Univac 1105 computer
. . . . Univac 1106 computer
. . . . Univac 1107 computer
. . . . Univac 1108 computer
. . . . Univac 1110 computer
. . CDC computers
. . . CDC 160-A computer
. . . CDC 1604 computer
. . . CDC 3100 computer
. . . CDC 3200 computer
. . . CDC 3600 computer
. . . CDC 3800 computer
. . . CDC 6000 series computers
. . . . CDC 6400 computer
. . . . CDC 6600 computer
. . . . CDC 6700 computer
. . . CDC 7000 series computers
. . . . CDC 7600 computer
. . . CDC 8090 computer
. . . CDC Cyber 170 series computers
. . . . CDC Cyber 175 computer
. . . CDC Cyber 74 computer
. . . CDC Cyber 174 computer
. . . CDC Cyber 203 computer
. . . CDC Cyber 205 computer
. . . CDC Star 100 computer
. . counting rate computers
. . DDP computers
. . . DDP 516 computer
. . digital computers
. . . CDC 160-A computer
. . . CDC 1604 computer
. . . CDC 3100 computer
. . . CDC 3200 computer
. . . CDC 3600 computer
. . . CDC 3800 computer
. . . CDC 6000 series computers
. . . . CDC 6400 computer
. . . . CDC 6600 computer
. . . . CDC 6700 computer
. . . CDC 7000 series computers
. . . . CDC 7600 computer
. . . CDC 8090 computer
. . . CDC Cyber 170 series computers
. . . . CDC Cyber 175 computer
. . . CDC Cyber 74 computer

. . . CDC Cyber 174 computer
. . . CDC Cyber 203 computer
. . . CDC Cyber 205 computer
. . . CDC Star 100 computer
. . . EAI 680 computer
. . . EAI 8400 computer
. . . EAI 8900 computer
. . . EMR 6050 computer
. . . Ferranti Mercury computer
. . . GE computers
. . . . GE 625 computer
. . . . GE 635 computer
. . . Hewlett-Packard computers
. . . Honeywell computers
. . . . DDP 516 computer
. . . . Honeywell 600/6000 computer
. . . . Honeywell ADEPT computer
. . . . Honeywell DDP 116 computer
. . . IBM 360 computer
. . . IBM 370 computer
. . . IBM 650 computer
. . . IBM 704 computer
. . . IBM 709 computer
. . . IBM 1130 computer
. . . IBM 1401 computer
. . . IBM 1410 computer
. . . IBM 1620 computer
. . . IBM 2250 computer
. . . IBM 7030 computer
. . . IBM 7040 computer
. . . IBM 7044 computer
. . . IBM 7070 computer
. . . IBM 7074 computer
. . . IBM 7090 computer
. . . IBM 7094 computer
. . . ICL computers
. . . Illiac computers
. . . . Illiac 3 computer
. . . . Illiac 4 computer
. . . microcomputers
. . . . personal computers
. . . . . IBM personal computers
. . . . . Macintosh personal computers
. . . minicomputers
. . . . Nova computers
. . . Modcomp II computer
. . . Modcomp IV computer
. . . parallel computers
. . . . massively parallel processors
. . . . . Connection Machine
. . . . MIMD (computers)
. . . . SIMD (computers)
. . . PDP 15 computer
. . . PDP computers
. . . . PDP 7 computer
. . . . PDP 8 computer
. . . . PDP 9 computer
. . . . PDP 10 computer
. . . . PDP 11 computer
. . . . PDP 11/20 computer
. . . . PDP 11/40 computer
. . . . PDP 11/45 computer
. . . . PDP 11/50 computer
. . . . PDP 11/70 computer
. . . . PDP 12 computer
. . . Philco 2000 computer
. . . Raytheon computers
. . . RCA spectra 70 computer
. . . SDS 900 series computers
. . . . SDS 930 computer
. . . SDS 9300 computer
. . . SEL computers
. . . sequential computers
. . . SIGMA 5 computer
. . . SIGMA computers
. . . . SIGMA 9 computer
. . . Solomon computers
. . . Univac 1100 series computers
. . . . Univac 1105 computer
. . . . Univac 1106 computer
. . . . Univac 1107 computer
. . . . Univac 1108 computer
. . . . Univac 1110 computer
. . . Univac 80 computer
. . . Univac 418 computer
. . . Univac 490 computer
. . . Univac 494 computer
. . . Univac 1230 computer
. . . Univac Larc computer
. . . VAX computers
. . . . VAX-11 series computers
. . . . . VAX-11/780 computer
. . embedded computer systems
. . . airborne/spaceborne computers
. . hybrid computers
. . hypercube multiprocessors
. . IBM computers
. . . IBM 360 computer
. . . IBM 370 computer
. . . IBM 650 computer
. . . IBM 704 computer
. . . IBM 709 computer
. . . IBM 1130 computer
. . . IBM 1401 computer
. . . IBM 1410 computer
. . . IBM 1620 computer
. . . IBM 2250 computer
. . . IBM 7030 computer
. . . IBM 7040 computer
. . . IBM 7044 computer
. . . IBM 7070 computer
. . . IBM 7074 computer
. . . IBM 7090 computer
. . . IBM 7094 computer
. . . IBM personal computers
. . MINOS computer
. . optical computers
. . Pegasus computer
. . RCA computers
. . . RCA spectra 70 computer
. . . RCA-110 computers
. . Siemens 2002 computer
. . site data processors
. . supercomputers
. . . Connection Machine
. . . Cray computers
. . transputers
. . Univac computers
. . . Univac 1100 series computers
. . . . Univac 1105 computer
. . . . Univac 1106 computer
. . . . Univac 1107 computer
. . . . Univac 1108 computer
. . . . Univac 1110 computer
. . . Univac 80 computer
. . . Univac 418 computer
. . . Univac 490 computer
. . . Univac 494 computer
. . . Univac 1230 computer
. . . Univac Larc computer
RT applications programs (computers)
arithmetic and logic units
artificial intelligence
automata theory
∞ automation
calculators
central processing units
computation
computer compatible tapes
computer components
computer design
computer graphics
computer program integrity
computer programs
computer systems programs
computer techniques
computerized simulation
control data (computers)
control units (computers)
cybernetics
data converters
data processing
digital to voice translators
file maintenance (computers)
fixed point arithmetic
floating point arithmetic
HAL/S (language)
hardware
information retrieval
information theory
Intel 8080 microprocessor
logic circuits
machine-independent programs
∞ machinery
memory (computers)
multiprocessing (computers)
printers (data processing)
read-only memory devices
real time operation
run time (computers)
telecommunication
vocoders

Comsat program
GS programs
. **Comsat program**
RT communication satellites
Early Bird satellites
Telstar project
Telstar satellites

ComStar C
DEF The third in a series of Comsat domestic communications satellites launched in a transfer orbit by NASA for COMSAT.
GS artificial satellites
. communication satellites
. . Communications Technology Satellite
. . . **ComStar C**

ComStar satellites
DEF Series of domestic Comsat communication satellites.
GS artificial satellites
. communication satellites
. . **ComStar satellites**
RT satellite networks

concatenated codes
DEF Two or more codes which are encoded and decoded in series.
RT binary codes
∞ codes
coding
data transmission
decoding
error correcting codes
redundancy encoding
Read-Solomon codes
signal encoding
trellis coding

concavity
RT contour sensors
contours
convexity
flatness

shapes
∞ surface geometry

concentrating
RT accumulations
adsorption
agglomeration
beneficiation
centrifuging
classifiers
coagulation
coalescing
compressing
∞ concentration
concentrators
condensing
crystallization
distillation
drying
enrichment
evaporation
extraction
filtration
flocculating
flotation
percolation
precipitation (chemistry)
∞ separation
separators
settling
sorption
stress concentration
upgrading
vaporizing

∞ **concentration**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The quantity of a substance contained in a unit quantity of sample.
RT concentrating
concentration (composition)
crowding
filtration
isotopic enrichment

concentration (composition)
UF *volume fraction*
GS composition (property)
. **concentration (composition)**
. . atom concentration
. . carbon dioxide concentration
. . fiber volume fraction
. . low concentrations
. . mascons
. . meteoroid concentration
. . moisture content
. . . atmospheric moisture
RT ∞ concentration
dilution
particulate sampling
purity
quality
sampling
∞ saturation
solubility

concentrators
GS **concentrators**
. spirals (concentrators)
RT accumulators
centrifuges
classifiers
∞ classifying
columns (process engineering)
concentrating
evaporators
filtration
fluid filters
precipitators
radiative heat transfer
separators
size separation
sizing screens
solar collectors
stills
thermal radiation
traps
washers (cleaners)

concentric cylinders
RT ∞ cylinders
cylindrical shells

concentric spheres
DEF Structures in which the space between the spheres is utilized for experiments involving fluid flow, etc.
GS symmetrical bodies
. bodies of revolution
. . spheres
. . . **concentric spheres**
RT concentricity

concentricity
RT ∞ centers
concentric spheres
eccentricity

Concorde aircraft
GS jet aircraft
. turbofan aircraft
. . **Concorde aircraft**
Sud Aviation aircraft
. **Concorde aircraft**
supersonic aircraft
. supersonic transports
. . **Concorde aircraft**
transport aircraft
. **Concorde aircraft**
RT ∞ aircraft

concrete structures
DEF Buildings, dams, stadiums, etc., constructed entirely of a mixture of aggregates, water, and Portland cement.
RT aggregates
breakwaters
construction
earthquake resistant structures
foundations
∞ materials
rigid structures
∞ structures
towers

concretes
DEF Homogeneous mixtures of portland cement, aggregates, and water and which may contain admixtures.
RT admixtures
aggregates
cements
∞ construction materials
grout
insulation
masonry
mortars (material)
pavements
structural members

concurrent engineering
(added September 1994)
DEF Use of multi-disciplinary teams to perform simultaneous design of products and production processes from conception through disposal.
RT design to cost
∞ engineering
industrial management
life cycle costs
multidisciplinary research
product development
reliability engineering
systems engineering
total quality management
value engineering

concurrent processing
GS data processing
. **concurrent processing**
RT architecture (computers)
computer systems design
MIMD (computers)
multiprocessing (computers)
parallel processing (computers)
SIMD (computers)

condensates
GS **condensates**
. Bose–Einstein condensates
. hydrometeors
RT Aitken nuclei
∞ condensation
condensers (liquefiers)
condensing
contrails
drop size
liquefied gases
plumes
vapors

∞ **condensation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The physical process by which a vapor becomes a liquid or solid; the opposite of evaporation. Specifically, in meteorology, the transformation from vapor to liquid.
RT condensates
condensation nuclei
condensing
gas–metal interactions
liquefaction
Mayer problem
rectification

condensation nuclei
DEF Liquid or solid particles upon which condensation of water begins in the atmosphere.
GS **condensation nuclei**
. Aitken nuclei
RT aerosols
cloud physics
clouds (meteorology)
∞ condensation
condensing
drops (liquids)
ice nuclei
meteorology
microparticles
nucleation
∞ nuclei
rain

condensation pumps
GS pumps
. vacuum pumps
. . **condensation pumps**
vacuum apparatus
. vacuum pumps
. . **condensation pumps**

condensation trails
USE **contrails**

condensed matter physics
RT **Bose–Einstein condensates**
matter (physics)
negative matter
∞ physics
∞ **solid state physics**

condenser radiators
USE **condensers (liquefiers)**
heat radiators

∞ **condensers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT capacitors
condensers (liquefiers)
jet condensers
photographic rectifiers

condensers (liquefiers)
UF *condenser radiators*
GS **condensers (liquefiers)**
. **jet condensers**
RT absorbers (equipment)
air conditioning
air conditioning equipment
cold traps
columns (process engineering)
compressors
condensates
∞ condensers
condensing
cooling fins
cooling systems
distillation equipment
drying apparatus
evaporators
exhaust systems
film condensation
heat exchangers
heat pumps
liquefied gases
refrigerating machinery
separators
spacecraft radiators
vaporizers

condensing
UF *gas liquefaction*
GS **condensing**
. film condensation
RT association reactions
cloud physics
concentrating
condensates
∞ condensation
condensation nuclei
condensers (liquefiers)
cooling
dehumidification
dew point
distillation
drop size
drops (liquids)
evaporation
gas–liquid interactions
gas–metal interactions
nucleation
phase change materials
phase transformations
refrigerating
∞ saturation
∞ separation
sublimation
supercooling
supersaturation

conditioned reflexes
GS **reflexes**
. **conditioned reflexes**
RT conditioning (learning)
reaction time

conditioned responses
USE **conditioning (learning)**

∞ **conditioning**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT beneficiation
conditioning (learning)
power conditioning
preconditioning

conditioning (learning)
UF *conditioned responses*
GS learning
. **conditioning (learning)**
RT behavior
biofeedback
conditioned reflexes
∞ conditioning
habituation (learning)
inhibition (psychology)

conditioning (treating)
USE **treatment**

conditions
GS **conditions**
. **adiabatic conditions**
. boundary conditions
. chronic conditions
. flight conditions
. Kutta–Joukowski condition
. Lipschitz condition
. nonadiabatic conditions
. nonequilibrium conditions
. runway conditions

Condor missile
GS **missiles**
. air to surface missiles
. . **Condor missile**

conductance
USE **resistance**

conducting
USE **conduction**

conducting fluids
SN (EXCLUDES PLASMAS)
RT conductors
electrolytes
∞ fluids
magnetohydrodynamics

conducting media
USE **conductors**

conducting polymers
(added January 1990)
GS conductors
. electric conductors
. . **conducting polymers**
RT organic semiconductors
polyacetylene
polymeric films
∞ polymers
polypyrroles
semiconductors (materials)

∞ **conduction**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The transfer of energy within and through a conductor by means of internal particle of molecular activity and without any net external motion. Used for conducting.
UF *conducting*
RT attenuation
conductive heat transfer
convection
electric conductors
electric power transmission
heat transfer
heating
refraction
sound propagation
sound transmission
thermal conductors
thermal diffusion
transmission
wave propagation

conduction bands
DEF A range of states in the energy spectrum of a solid in which electrons can move freely.
GS energy bands
. **conduction bands**
RT band structure of solids
∞ bands
Brillouin zones
electron transitions
Franck–Condon principle
NDM semiconductor devices
polarons
porous silicon
quantum wells
semiconductors (materials)
trapping

conduction electrons
GS particles
. charged particles
. . energetic particles
. . . electrons
. . . . **conduction electrons**
. corpuscular radiation
. . energetic particles
. . . electrons
. . . . **conduction electrons**
. elementary particles
. . fermions
. . . leptons
. . . . electrons
. . . . . **conduction electrons**
RT free electrons
quantum wells
valence

conductive heat transfer
UF *heat conduction*
GS transmission
. heat transmission
. . heat transfer
. . . **conductive heat transfer**
RT ∞ conduction
convective heat transfer
laminar heat transfer
thermal conductivity
thermal conductors

∞ **conductivity**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The ability to transmit, as electricity, heat, sound, etc. A unit measure of electrical

conduction; the facility with which a substance conducts electricity, as represented by the current density per unit electrical-potential gradient in the direction of flow.
RT atmospheric conductivity
electrical properties
electrical resistivity
fluid flow
impedance
ionospheric conductivity
magnetoresistivity
mobility
Ohms law
photoconductivity
plasma conductivity
superconducting power transmission
superconductivity
thermal conductivity
transconductance
transport properties
void ratio

conductivity meters
GS measuring instruments
. **conductivity meters**
. . electrical conductivity meters

conductors
DEF Substances or entities which transmit electricity, heat, or sound. Used for conducting media.
UF *conducting media*
GS **conductors**
. bus conductors
. **electric conductors**
. . beam leads
. . conducting polymers
. . electric wire
. electrolytes
. . anolytes
. . catholytes
. . ion exchange membrane electrolytes
. . jumpers
. . molten salt electrolytes
. . nonaqueous electrolytes
. . solid electrolytes
. flat conductors
. . beam leads
. photoconductors
. superconductors (materials)
. . high temperature superconductors
. . . BSCCO superconductors
. . . YBCO superconductors
. . organic superconductors
. thermal conductors
RT antennas
conducting fluids
exploding wires
metals
nonferrous metals
organic semiconductors
semiconductors (materials)
subreflectors

cones
SN (LIMITED TO MATERIAL OBJECTS)
DEF Geometric configurations having a circular bottom and sides tapering off to an apex (as in nose cones). Used for conical flare and fusiform shapes.
UF *conical flare*
fusiform shapes
GS **cones**
. circular cones
. conical bodies
. . slender cones
. half cones
. Mach cones
. nose cones
. . ablative nose cones
. . rocket nose cones
. shatter cones
RT aerodynamic configurations
bodies of revolution
conical shells
conics
frustums
symmetrical bodies

cones (volcanoes)
UF *cinder cones*
GS geology
. **cones (volcanoes)**
landforms
. **cones (volcanoes)**
RT basalt
calderas
craters
effusives
geomorphology
lava
Mars volcanoes
mountains
orography
paleomagnetism
petrology
Rouse belts
volcanoes
volcanology

conferences
UF *congresses*
meetings
proceedings
symposia
RT Committee on Space Research
consulting
conventions
∞ discussion
documentation
documents
papers
reports
Starsite program
teleconferencing

confidence
RT correlation
errors
probability theory
psychological effects
quality control
reliability
risk
statistical analysis

confidence limits
DEF In statistics, the upper and lower extremes of the confidence interval.
RT contingency
estimates
forecasting
maximum likelihood estimates
∞ measurement
null hypothesis
precision
predictions
quality control
range (extremes)
reliability
risk
sampling
significance
standard deviation
statistical analysis
statistical tests
∞ tests
variance (statistics)

configuration interaction
DEF In physical chemistry, the interaction between two different possible arrangements of the electrons in an atom or molecule.
RT computational chemistry
electron orbitals
∞ interactions
intermolecular forces
molecular interactions
molecular structure
∞ structures

configuration management
DEF A discipline applying technical and administrative direction and surveillance to: identify and document the functional and physical characteristics of a configuration item, control changes to those characteristics, record and report change processing and implementation status, and verify conformance with specified requirements.
GS management
. **configuration management**
RT ∞ configurations

∞ **configurations**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aerodynamic configurations
aircraft configurations
body-wing and tail configurations
canard configurations
configuration management
launch vehicle configurations
missile configurations
propulsion system configurations
spacecraft configurations
staggering
torpedoes

confinement
RT astronaut performance
containment
isolation
magnetic compression
nuclear reactor control
plasma control
plasma equilibrium
sensory deprivation

confining
RT astronaut performance
deprivation
isolation
sensory deprivation

confirmation
USE **proving**

confluence
USE **convergence**

conformal mapping
UF *conformal transformations*
GS analysis (mathematics)
. complex variables
. . **conformal mapping**
functions (mathematics)
. **conformal mapping**
RT coordinate transformations
Euler-Cauchy equations
graphs (charts)
invariant imbeddings

isoparametric finite elements
Jacobi integral
Lighthill method
minimal surfaces
Schwarz–Christoffel transformation
Theodorsen transformation

conformal transformations
USE **conformal mapping**

confusion
RT entrapment
tangling

congeners
RT ∞ chemical compounds
classifications
isomers
muscles
tautomers

congenital anomalies
UF *congenital conditions*
RT chromosomes
genetics
heredity
Rhesus factor

congenital conditions
USE **congenital anomalies**

congestion
RT circulation
ischemia
pneumonia
respiratory diseases
vasodilation

Congo (Brazzaville)
UF *Brazzaville*
French Equatorial Congo
GS nations
. **Congo (Brazzaville)**
RT Africa

Congo (Kinshasa)
USE **Democratic Republic of Congo**

congresses
USE **conferences**

congressional reports
UF *proceedings*
GS documents
. **congressional reports**
reports
. **congressional reports**
RT Presidential reports

congruences
GS number theory
. **congruences**
RT ∞ coherence
collocation
dividing (mathematics)
geometry
identities
integers
symmetry

conical bodies
UF *conoids*
GS cones
. **conical bodies**
. . slender cones
symmetrical bodies
. bodies of revolution
. . **conical bodies**
. . . slender cones
RT afterbodies
axisymmetric bodies

conical camber
GS camber
. **conical camber**
RT wing camber

conical flare
USE **cones**

conical flow
GS fluid flow
. **conical flow**
RT axisymmetric flow
baffles
∞ diffusers
multiphase flow
separated flow
three dimensional flow
wall flow
wedge flow

conical inlets
GS intake systems
. **conical inlets**
RT air intakes
conical nozzles
funnels

conical nozzles
RT annular nozzles
conical inlets
convergent nozzles
convergent–divergent nozzles
divergent nozzles
exhaust diffusers
exhaust nozzles
hypersonic nozzles
inlet nozzles
∞ jet nozzles
nozzle geometry
nozzle inserts
nozzle walls
∞ nozzles
plug nozzles
rocket nozzles
skirts
sonic nozzles
spike nozzles
spray nozzles
supersonic nozzles
transonic nozzles
turbine exhaust nozzles
wind tunnel nozzles

conical scanning
DEF Scanning in which the direction of maximum radiation generates a cone whose vertex angle is of the order of the beam width. Such scanning may be either rotating or nutating, according as the direction of polarization rotates or remains unchanged.
GS scanning
. **conical scanning**
RT examination
field of view
monitors
panoramic scanning
radar scanning
readers
reading
scanners
searching
surveillance

conical shells
GS shells (structural forms)
. **conical shells**
RT cones

conics
GS geometry
. Euclidean geometry
. . analytic geometry
. . . **conics**
. . . . ellipses
. . . . hyperbolas
. . . . parabolas
RT cones
half cones
loci

conifers
GS plants (botany)
. trees (plants)
. . **conifers**
RT deciduous trees
forests
timber identification
∞ trees

coning motion
(added June 1997)
RT dynamic stability
gyration
∞ motion
motion stability
nutation
precession
rotation
spin stabilization
tumbling motion
yaw

conjugate gradient method
DEF An interactive method for solving a system of linear equations of dimension N which terminates in at most N steps if no rounding errors are encountered. Each iterate will bring one closer to the solution.
GS analysis (mathematics)
. numerical analysis
. . iteration
. . . **conjugate gradient method**
RT algorithms
conjugates
gradients
iterative solution

conjugate points
GS analysis (mathematics)
. complex variables
. . conjugates
. . . **conjugate points**
RT lines of force
magnetic fields

conjugated circuits
DEF Branches of an electrical network configured so that a change in the electromotive force in either branch does not result in a current change in the other.
GS circuits
. **conjugated circuits**

conjugates
GS analysis (mathematics)
. complex variables
. . **conjugates**
. . . conjugate points
RT Cholesky factorization
conjugate gradient method
conjugation
finite element method

conjugation
GS **conjugation**
. phase conjugation
. . four-wave mixing
RT conjugates

∞ **conjunction**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Boolean algebra
occultation
orbits
probability theory
set theory

conjunctiva
GS anatomy
. sense organs
. . eye (anatomy)
. . . **conjunctiva**
membranes
. **conjunctiva**
RT conjunctivitis
keratitis
vision

conjunctivitis
GS diseases
. eye diseases
. . **conjunctivitis**
. infectious diseases
. . **conjunctivitis**
RT bacterial diseases
conjunctiva

Connecticut
GS nations
. United States
. . **Connecticut**
RT New Haven (CT)

Connection Machine
(added September 1992)
GS data processing equipment
. computers
. . digital computers
. . . parallel computers
. . . . massively parallel processors
. . . . . **Connection Machine**
. . supercomputers
. . . **Connection Machine**
RT architecture (computers)
interprocessor communication
multiprocessing (computers)
parallel processing (computers)

connections
USE **joints (junctions)**

connective tissue
GS anatomy
. musculoskeletal system
. . **connective tissue**
. . . bone marrow
. . . cartilage
. . . collagens
RT adipose tissues
bones
exoskeletons
joints (anatomy)
ligaments
tendons

connectors
GS **connectors**
. electric connectors
. umbilical connectors
. unions (connectors)
RT adapters
cordage
couplings
disconnect devices
fasteners
fittings
flanges
flat conductors
joints (junctions)
jumpers
∞ junctions
linkages
sleeves
∞ terminals
yokes

connectors (electric)
USE **electric connectors**

conoids
USE **conical bodies**

consciousness
GS perception
. sensory perception
. . **consciousness**
RT attention
mental performance
recognition
sleep deprivation

consecutive events
GS events
. **consecutive events**
RT intervals
Petri nets
probability theory
scheduling
sequencing
sequential control
time measurement

conservation
GS **conservation**
. energy conservation
RT agriculture
deforestation
drought
energy policy
environment management
firebreaks
forest management
forests
habitats
land use
Newton second law
nonconservative forces
parity
potable water
regional planning
rural land use
soil science
soils
water management
water reclamation

conservation equations
RT Bernoulli theorem
continuity equation
∞ equations
nonconservative forces
vorticity transport hypothesis

conservation laws
GS laws
. **conservation laws**
RT momentum theory
Newton Theory
nonconservative forces

consistency
DEF A property of a material determined by the complete flow force relation.
RT accuracy
computer systems performance
effort
errors
leveling
linearity
∞ measurement
∞ performance
precision
quality
ratings
reliability
tolerances (mechanics)
validity
variability

consoles
DEF Arrays of controls and indicators for the monitoring and control of a particular sequence of actions, as in the checkout of a rocket, a countdown action, or a launch procedure.
GS **consoles**
. remote consoles
RT automatic typewriters
computer components
control boards
data processing terminals
display devices
∞ equipment
flat panel displays
head-up displays
man machine systems
manual control

consolidation
RT ∞ combination
densification
liquid phase sintering
overconsolidation
stabilization

consonants (speech)
RT speech
vowels
words (language)

∞ **constant**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT coefficients
constants
invariance
time constant

constant speed propellers
USE **variable pitch propellers**

constant volume balloons
USE **superpressure balloons**

constantan
GS alloys
. **constantan**
RT copper
nickel
thermocouples

constants
GS **constants**
. Bohr magneton
. gravitational constant
. Gruneisen constant
. Hubble constant

. Plancks constant
. solar constant
. time constant
. . perceptual time constant
RT coefficients
∞ constant

constellations
DEF Originally conspicuous configurations of stars; now regions of the celestial sphere marked by arbitrary boundary lines.
GS **constellations**
. Andromeda Constellation
. Aries constellation
. Auriga constellation
. Cassiopeia constellation
. Centaurus constellation
. Cepheus constellation
. Corona Borealis constellation
. Cygnus constellation
. Lyra constellation
. Orion constellation
. Sagittarius constellation
. Scorpius constellation
. Scutum constellation
. Taurus constellation
RT celestial sphere
planispheres
stars
zodiac

constitution
RT atomic structure
governments
law (jurisprudence)

constitutional diagrams
USE **phase diagrams**

constitutive equations
RT electric fields
∞ equations
magnetic charge density
magnetic fields
magnetic flux

constraints
UF *hindrance*
limitations
restraints
GS **constraints**
. meteorological parameters
. . Brunt–Vaisala frequency
RT blocking
constrictions
dynamic programming
∞ holding
linear programming
nonlinear programming
operations research
optimization
penalty function
range (extremes)
retaining

constrictions
UF *restrictions*
RT ∞ barriers
blocking
chokes (restrictions)
closures
constraints
contracts
impedance
plugging
∞ resistance
retarders (devices)
seals (stoppers)
stopping

constrictors
GS anatomy
. musculoskeletal system
. . muscles
. . . **constrictors**

construction
SN (EXCLUDES TYPES OF STRUCTURES)
UF *erection*
RT architecture
assembling
bridges (structures)
buildings
caissons
concrete structures
∞ construction materials
contractors
contracts
∞ design
excavation
fabrication
highways
inspection
installing
layouts
maintenance
masonry
quality control
reconstruction
rigging
shipyards
space manufacturing
Starsite program
steel structures
stress analysis
structural analysis
structural design
structural engineering
structural members
surveys
tunneling (excavation)
welding

construction in space
USE **orbital assembly**

construction industry
GS industries
. **construction industry**
RT bridges (structures)
buildings
contractors
industrial areas
industrial plants
towers
trusses

∞ **construction materials**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *building materials*
structural materials
RT aggregates
aircraft construction materials
aircraft survivability
airframe materials
architecture
bitumens
boards (paper)
bricks
cements
composite materials
concretes
construction
graphite–epoxy composites
grout
insulation
lathes
Masonite (trademark)
masonry
∞ materials
panels
plastics
polymer matrix composites
protective coatings
reactor materials
skin (structural member)
spacecraft construction materials
structural members

consulting
RT conferences
management planning
personnel
resources

consumables (spacecraft)
DEF All supplies for spacecraft and spacecrews that will be consumed during a mission.
GS **consumables (spacecraft)**
. storable propellants
RT consumables (spacecrew supplies)
propellant storage
space logistics
working fluids

consumables (spacecrew supplies)
GS **consumables (spacecrew supplies)**
. space rations
RT clothing
consumables (spacecraft)
dehydrated food
∞ food
food production (in space)
hygiene
potable water
provisioning
sanitation
space flight feeding
space logistics
survival equipment

consumers
RT consumption
market research
marketing
product development

consumption
GS **consumption**
. energy consumption
. fuel consumption
. oxygen consumption
. propellant consumption
. water consumption
RT commerce
consumers
demand (economics)
depletion
exhausting
exhaustion
supplying
utilization

contact dermatitis
GS diseases
. infectious diseases
. . dermatitis
. . . **contact dermatitis**
RT allergic diseases
dermatology
epidermis
itching

skin (anatomy)

contact lenses
GS lenses
. **contact lenses**
RT eyepieces
reticles

contact loads
DEF Dynamic loading by contact between two bodies.
GS loads (forces)
. **contact loads**
. . impact loads
. . rolling contact loads
RT compression loads
dynamic pressure
random loads
shock loads
∞ sliding contact
transient loads

contact potentials
DEF The potential differences at the junctions of two dissimilar substances.
GS potential energy
. electric potential
. . **contact potentials**
RT electric contacts
surface properties

contact resistance
DEF The resistance to current flow between two touching bodies, consisting of constriction resistance and film resistance.
GS electrical properties
. electrical impedance
. . electrical resistance
. . . **contact resistance**
impedance
. electrical impedance
. . electrical resistance
. . . **contact resistance**
RT electric contacts
nonohmic effect
∞ resistance
surface properties

contactors
SN (EXCLUDES ELECTRIC SWITCHES)
RT carburetors
chemical reactors
columns (process engineering)
electric switches
mixers
sprayers

contacts (electric)
USE **electric contacts**

contacts (geology)
GS geology
. **contacts (geology)**
RT formations
metamorphism (geology)
mineral deposits
rock intrusions
rocks

containerless melts
GS melts (crystal growth)
. **containerless melts**
RT crystal growth
crystallization
crystals
directional solidification (crystals)
liquid bridges
low gravity manufacturing
manufacturing
melting
orbital workshops
space processing
weightlessness

∞ **containers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF A non-specific term for receptacles capable of closure. Used for receptacles (containers).
UF *receptacles (containers)*
RT ampoules
autoclaves
bags
barrels (containers)
baskets
biopaks
bottles
boxes (containers)
bundles
cans
∞ capsules
cartridges
cases (containers)
crucibles
disposal
drums (containers)
enclosures
fuel tanks
glassware
hoppers
housings
materials handling
micromodules
packages
packaging
preserving
pressure vessels
protectors
reels
spools
sprayers
tanks (containers)
transporter
trays
wing tanks

containment
RT asteroid capture
blocking
burst tests
confinement
retaining
sealing
stopping

contaminants
UF *noxious materials*
pollutants
GS **contaminants**
. radioactive contaminants
. trace contaminants
RT chlorofluorocarbons
chlorofluoromethane
contamination
decontamination
diluents
dirt
dust
effluents
environment effects
environmental quality
fuel contamination
hazardous materials
hazardous wastes
impurities
∞ materials
nonpoint sources
particulates
pollution
purity
quality
soil pollution
wastes
water treatment

contamination
GS **contamination**
. fuel contamination
. spacecraft contamination
RT air pollution
antifouling
antiinfectives and antibacterials
contaminants
decontamination
environment effects
fouling
intrusion
molecular shields
nonpoint sources
pollution
purity
radioactive wastes
water pollution

content
GS **content**
. bone mineral content
RT ∞ components
∞ composition
ingredients

context
DEF The composition, structure, or manner in which something is put together. Also refers to the situation or environment of an event.
RT natural language (computers)
pattern recognition

context free languages
GS languages
. programming languages
. . **context free languages**
RT computer programming
symbolic programming

continental drift
RT continents
Earth crust
Earth planetary structure
geomagnetism
geophysics
paleomagnetism

continental margins
USE **continental shelves**

continental shelves
DEF The ocean floor that is between the shoreline and the abyssal ocean floor, including various provinces; the continental shelf; continental borderland; continental slope; and the continental rise. Used for continental margins.
UF *continental margins*
RT geology
ocean bottom
seamounts
∞ shelves

continents
GS **continents**
. Africa
. Asia
. Australia

. Europe
. . Central Europe
. North America
. South America
RT Antarctic regions
Central Europe
continental drift
cratons
geography
mountains
transcontinental systems

contingency
RT confidence limits
correlation
estimates
expectation
materials handling
predictions
reserves
risk

continuity
RT continuity (mathematics)
coordination
scheduling
topology
variability

continuity (mathematics)
GS analysis (mathematics)
. calculus
. . **continuity (mathematics)**
RT continuity
functions (mathematics)
isoperimetric problem
normal density functions
Poisson density functions
probability density functions
regularity
statistical analysis
symmetry
topology

continuity equation
RT conservation equations
continuum mechanics
Crocco–Lee theory
∞ equations
equations of motion
equations of state
fluid dynamics
nonconservative forces
steady flow

continuous flow electrophoresis
USE **electrophoresis**

continuous noise
RT ∞ noise
noise propagation
sound generators

continuous radiation
UF *continuous waves*
GS **continuous radiation**
. modulated continuous radiation
RT absorption spectra
background radiation
coherent radiation
corpuscular radiation
elastic waves
electromagnetic radiation
emission spectra
pulsed radiation
∞ radiation
∞ rays

continuous spectra
DEF Spectra in which wavelengths, wave numbers, and frequencies are represented by the continuum of real numbers or a portion thereof, rather than by a discrete sequence of numbers. For electromagnetic radiation, spectra that exhibit no detailed structure and represent a gradual variation of intensity with wavelength from one end to the other, as the spectra of incandescent solids. For particles, spectra that exhibit a continuous variation of the momentum or energy.
GS spectra
. **continuous spectra**
RT astronomical spectroscopy
solar spectra
spectral emission
stellar spectra

continuous wave lasers
GS stimulated emission devices
. lasers
. . **continuous wave lasers**
RT argon lasers
carbon dioxide lasers
carbon monoxide lasers
chemical oxygen–iodine lasers
laser stability
solid state lasers

continuous wave radar
UF *CW radar*
GS radar
. **continuous wave radar**
RT coherent radar
Doppler radar
pulse radar
radar detection
radar range
search radar
surveillance radar
tracking radar

continuous waves
USE **continuous radiation**

continuum flow
GS fluid flow
. gas flow
. . **continuum flow**
RT free molecular flow
molecular flow
rarefied gas dynamics
slip flow

continuum mechanics
RT Burger equation
classical mechanics
continuity equation
continuum modeling
∞ dynamics
flow theory
fluid mechanics
Maxwell bodies
∞ mechanics (physics)
multipolar fields
solid mechanics
statistical mechanics
stress tensors

continuum modeling
RT continuum mechanics
continuums
large space structures
mathematical models
structural analysis

continuums
DEF Things that are continuous, which have no discrete parts as the continuum of real numbers as opposed to the sequence of discrete integers, as the background continuum of a spectrogram due to thermal radiation.
RT continuum modeling
probability theory
real variables
relativity
topology

contour sensors
DEF The sensing of image coincidences by means of optical processing techniques.
RT boundaries
concavity
contours
convexity
imagery
images
∞ sensors
shapes
topography

contours
UF *curved surfaces*
RT concavity
contour sensors
convexity
curved panels
datum (elevation)
elevation
flatness
geomorphology
hypsography
mapping
roughness
shapes
topography

contract incentives
GS incentives
. **contract incentives**
motivation
. **contract incentives**

contract management
GS management
. **contract management**
RT contracts
decision making
decisions
PERT
project management
schedules
subcontracts
systems engineering

contract negotiation
RT contractors
contracts
decision making
government/industry relations
industries
management
manufacturing
subcontracts

contraction
RT cooling
∞ reduction
shrinkage
spasms

contractors
RT columns (process engineering)
construction

construction industry
contract negotiation
contracts
government/industry relations
industries
qualifications
subcontracts
transportation

contracts
GS **contracts**
. insurance (contracts)
. subcontracts
RT agreements
cancellation
constrictions
construction
contract management
contract negotiation
contractors
estimates
estimating
extensions
federal budgets
government procurement
government/industry relations
grants
leasing
legal liability
options
procurement
projects
proposals
revisions
supplements

contrails
DEF Condensation trails. Artificial clouds made by the exhaust of jet aircraft.
UF *condensation trails*
vapor trails
RT condensates
wakes

contralateral functions
RT ∞ functions

contrarotating propellers
DEF Two propellers mounted on concentric shafts having a common drive and rotating in opposite directions.
GS propellers
. **contrarotating propellers**
RT propeller drive
propeller efficiency
turboprop engines

contrast
DEF In general, the degree of differentiation between different tones in an image.
GS **contrast**
. image contrast
. phase contrast
RT character recognition
color
legibility
perception
printing
resolution
∞ sharpness
visibility
vision

∞ **control**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *control systems*
controlled stability
regulation
RT access control
active control
adaptive control
air navigation
air traffic control
aircraft control
altitude control
approach control
astrionics
attitude control
automatic control
automatic control valves
automatic flight control
automatic frequency control
automatic gain control
avionics
biofeedback
boundary layer control
cascade control
chemical reaction control
circulation control airfoils
circulation control rotors
combustion control
command and control
control boards
control configured vehicles
control data (computers)
control equipment
control moment gyroscopes
control rockets
control rods
control simulation
control stability
control sticks
control surfaces
control systems design
control theory
control units (computers)
control valves
controllability
controlled atmospheres
controlled fusion
controllers
critical path method
cybernetics
direct lift controls
directional control
dynamic characteristics
dynamic control
electric control
electronic control
elevators (control surfaces)
engine control
environmental control
feedback control
feedforward control
fire control
fire control circuits
flaps (control surfaces)
flight control
flood control
fluidics
fly by tube control
fly by wire control
frequency control
fuel control
ground based control
harmonic control
helicopter control
hydraulic control
integrated mission control center
interactive control
inventory controls
jet control
lateral control
linear quadratic Gaussian control
linear quadratic regulator
longitudinal control
magnetic control
manual control
MIMO (control systems)
missile control
model reference adaptive control
multivariable control
network control
nuclear reactor control
numerical control
off–on control
optical control
optimal control
payload control
phase control
plasma control
pneumatic control
pointing control systems
pollution control
porous boundary layer control
process control (industry)
proportional control
quality control
radar approach control
radio control
∞ reaction control
regulations
regulators
regulatory mechanisms (biology)
remote control
robot control
rocket engine control
satellite attitude control
satellite control
scheduling
self adaptive control systems
sequential control
servocontrol
servomechanisms
shape control
shock wave control
SISO (control systems)
spacecraft control
spectral shift control
spectral shift control reactor
speed control
stabilization
steering
Submarine Integrated Control project
systems engineering
tabs (control surfaces)
temperature control
thermal control coatings
thrust control
thrust vector control
time optimal control
traffic control
trajectory control
Transit Attitude Control satellite
transponder control group
turbojet engine control
variable stream control engines
visual control
voice control
wave incidence control
weather modification

control boards
UF *control panels*
RT consoles
∞ control
display devices
manual control
remote control

control configured vehicles
RT aircraft configurations
aircraft design
∞ control
flight control
technology utilization
∞ vehicles

control data (computers)
RT computers
∞ control
∞ data
data systems

control devices
USE **control equipment**

control equipment
UF *control devices*
GS **control equipment**
. control sticks
. pressure switches
. regulators
. . automatic control valves
. . . pressure regulators
. . . relief valves
. . cryostats
. . current regulators
. . flow regulators
. . . fuel flow regulators
. . oxygen regulators
. . speed regulators
. . thermostats
. . voltage regulators
. servoamplifiers
. teleoperators
RT aircraft control
automatic control
∞ control
∞ effectors
electric control
electronic control
feedback control
manipulators
manual control
nonlinear systems
off–on control
optical control
pneumatic control
proportional control
recording instruments
speed control
transducers

control moment gyroscopes
GS gyroscopes
. **control moment gyroscopes**
RT attitude control
attitude gyros
attitude indicators
∞ control
equations of motion
gimbals
gyrodampers
indicating instruments
measuring instruments
nutation dampers
servocontrol
servomechanisms

control panels
USE **control boards**

control rockets
DEF Vernier engines, retrorockets, or other such rockets, used to change the attitude of, guide, or make small changes in the speed of a rocket, spacecraft, or the like. Used for steering rockets.
UF *steering rockets*
GS engines
. rocket engines
. . Vernier engines
. . . **control rockets**
. torpedo engines
. . Vernier engines
. . . **control rockets**
RT ∞ control
retrorocket engines
steering
thrust control
variable thrust

control rods
GS rods
. **control rods**
RT ∞ control
neutron absorbers
nuclear reactor control
nuclear reactors
poisoning (reaction inhibition)
reactor cores
reactor safety

control simulation
GS simulation
. **control simulation**
RT aircraft control
computerized simulation
∞ control
control theory
flight simulation
flight simulators
motion simulators
spacecraft control
spacecraft maneuvers
training simulators

control stability
GS dynamic characteristics
. dynamic stability
. . **control stability**
stability
. dynamic stability
. . **control stability**
RT aircraft control
aircraft spin
aircraft stability
∞ control
controllability
flight control
loop transfer recovery
MIMO (control systems)
motion stability
Nyquist diagram
pilot induced oscillation
robustness (mathematics)
sampled data systems
SISO (control systems)
spacecraft motion
spacecraft stability
stability augmentation
systems stability

control sticks
GS control equipment
. **control sticks**
RT aircraft control
∞ control
flight control
manual control

control surfaces
GS **control surfaces**
. ailerons
. . flaperons
. . spoiler slot ailerons
. elevators (control surfaces)
. elevons
. flaps (control surfaces)
. . externally blown flaps
. . . upper surface blown flaps
. . flaperons
. . jet flaps
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
. guide vanes
. . jet vanes
. horizontal tail surfaces
. rudders
. . aerial rudders
. . marine rudders
. spoilers
. tabs (control surfaces)
RT aerodynamic brakes
aerodynamic configurations
aerodynamic interference
aerodynamics
aircraft parts
aircraft structures
airfoils
airframes
blunt trailing edges
boundary layer control
canard configurations
∞ control
drag devices
fins
fires
flight control
free wing aircraft
guidance (motion)
nose fins
stabilizers (fluid dynamics)
∞ surfaces
sweptback tail surfaces
T tail surfaces
tail assemblies
tail surfaces
trapezoidal tail surfaces
vanes
wings

control systems
USE **control**

control systems design
GS systems engineering
. **control systems design**
RT aerospace systems
automatic control
∞ automation
bionics
bond graphs
∞ control
control theory
controllers
cybernetics
∞ design
design analysis
electric control
electronic control
feedback control
genetic algorithms
H–infinity control
linear quadratic Gaussian control
linear quadratic regulator
loop transfer functions

loop transfer recovery
mathematical models
MIMO (control systems)
numerical control
operations research
optimal control
parameter identification
robot control
SISO (control systems)
system identification
systems analysis
systems integration

control theory
RT adaptive control
closed cycles
∞ control
control simulation
control systems design
controllability
distributed parameter systems
dynamic control
dynamical systems
feedback
feedback control
feedforward control
H-infinity control
interactive control
linear quadratic Gaussian control
linear quadratic regulator
loop transfer recovery
MIMO (control systems)
model reference adaptive control
multivariable control
observability (systems)
off-on control
optimal control
robot control
robustness (mathematics)
sampled data systems
servocontrol
shape control
SISO (control systems)
∞ theories
tracking problem

control units (computers)
DEF Those parts of computers that cause the arithmetic unit, storage, and transfer of a computer to operate in proper sequence.
RT central processing units
computer components
computers
∞ control
data processing equipment

control valves
GS valves
. **control valves**
RT actuators
∞ control
pneumatic control

controllability
DEF The capability of an aircraft, rocket, or other vehicle to respond to control, especially in direction or attitude. Used for handling qualities.
UF *handling qualities*
RT aircraft control
aircraft landing
aircraft performance
aircraft specifications
aircraft spin
aircraft stability
∞ control
control stability
control theory
directional stability
flight characteristics
helicopter control
helicopter performance
liquid sloshing
low speed stability
maneuverability
quality
spacecraft reliability
stability
steering
wheel brakes

controlled atmospheres
GS **controlled atmospheres**
. argon–oxygen atmospheres
. cabin atmospheres
. . spacecraft cabin atmospheres
. helium–oxygen atmospheres
. inert atmosphere
RT air conditioning
∞ atmospheres
∞ blankets
clean rooms
∞ control
environments
furnaces
gas mixtures
gnotobiotics
oxygen supply equipment
spacecraft environments

controlled avalanche transit time devices
USE **CATT devices**

controlled fusion
SN (CONTROLLED NUCLEAR FUSION)
GS nuclear reactions
. thermonuclear reactions
. . nuclear fusion
. . . **controlled fusion**
RT ∞ control
Joint European Torus
limiters (fusion reactors)
plasma compression
plasma cooling
plasma currents
plasma physics
relativistic electron beams
strongly coupled plasmas
thermonuclear power generation
zeta pinch

controlled stability
USE **control**

controllers
SN (LIMITED TO DEVICES AND CONTROL THEORY)
GS **controllers**
. power factor controllers
. servomechanisms
. . servoamplifiers
. . servomotors
RT actuators
analyzers
automatic control
∞ automation
∞ control
control systems design
cryostats
current regulators
cybernetics
electronic control
H-infinity control
instrument receivers
instrument transmitters
∞ instruments
linear quadratic regulator
measuring instruments
optical control
pneumatic control
pressure regulators
programmable logic devices
propellant actuated instruments
regulators
remote control
rocket-borne instruments
speed control
speed regulators
temperature control
thermostats
voltage regulators

Convair 340 aircraft
USE **CV-340 aircraft**

Convair 440 aircraft
USE **CV-440 aircraft**

Convair 880 aircraft
USE **CV-880 aircraft**

Convair 990 aircraft
USE **CV-990 aircraft**

convection
DEF In general, mass motion within a fluid resulting in transport and mixing of the properties of that fluid. Specifically, in meteorlogy, atmospheric motions that are predominately vertical.
GS **convection**
. forced convection
. free convection
. . Rayleigh–Benard convection
. . . Benard cells
. Marangoni convection
. stellar convection
. . solar convection (astronomy)
. surface tension driven convection
RT advection
base heating
Boussinesq approximation
∞ conduction
convection cells
convection–diffusion equation
fluid dynamics
Grashof number
heat transmission
heating
meteorology
mixing height
mixing layers (fluids)
stellar interiors

convection cells
(added June 1990)
RT atmospheric circulation
convection
convection currents
convective flow
convective heat transfer

convection clouds
GS clouds (meteorology)
. **convection clouds**
. . arc clouds
. . cumulonimbus clouds
. . . anvil clouds
. . cumulus clouds
. . . anvil clouds
RT air currents
cloud physics
meteorology
nephanalysis

supercooling
vertical air currents

convection currents
RT air currents
Benard cells
convection cells
convection–diffusion equation
electron bunching
fluid flow
free convection
mixing height
Rayleigh–Benard convection
solar convection (astronomy)
solar granulation
stellar convection
vertical air currents

convection–diffusion equation
(added August 1991)
DEF An equation for convection and diffusion, in which the rate of change with respect to time of the density (concentration) of the convecting/diffusing substance at a fixed point in space plus the product of the divergence of the velocity field and the density of the convecting/diffusing substance equals the product of the diffusion coefficient and the differential of the density of the convecting/diffusing substance.
UF *diffusion–convection equation*
RT Benard cells
computational fluid dynamics
convection
convection currents
convective flow
diffusion
diffusion coefficient
∞ equations
flow equations
flow theory
Rayleigh–Benard convection
reaction–diffusion equations

convective flow
UF *thermal currents*
GS fluid flow
. **convective flow**
. . Rayleigh–Benard convection
. . . Benard cells
RT convection cells
convection–diffusion equation
free convection
gas density
geophysical fluid flow cells
heat transmission
Marangoni convection
mass flow rate
mass transfer
porous boundary layer control
solar convection (astronomy)
stellar convection
surface tension driven convection
temperature
thermal diffusion

convective heat transfer
GS transmission
. heat transmission
. . heat transfer
. . . **convective heat transfer**
RT aerodynamic heating
boundary layer combustion
boundary layer flow
conductive heat transfer
convection cells
cooling fins
forced convection
free convection
laminar heat transfer
mass transfer
Nusselt number
radiative heat transfer
Rayleigh–Benard convection
surface cooling
temperature gradients
thermohydraulics
thermosiphons
turbulent heat transfer

conventions
RT agreements
air law
compatibility
conferences
∞ cooperation
international cooperation
international law
outer space treaty
standards

convergence
DEF Approach to a limit, e.g., by an infinite sequence. Used for confluence.
UF *confluence*
RT divergence
patch tests
regularity
tapering
variability

convergent nozzles
RT conical nozzles
fluid amplifiers
nozzle geometry
nozzle walls
∞ nozzles
turbine engines
turbojet engines

convergent–divergent nozzles
UF *de Laval nozzles*
GS exhaust nozzles
. **convergent–divergent nozzles**
RT conical nozzles
nozzle geometry
nozzle inserts
∞ nozzles
rocket nozzles
supersonic nozzles
transonic nozzles
turbine exhaust nozzles
wind tunnel nozzles

conversation
GS communicating
. verbal communication
. . **conversation**
speech
. **conversation**
RT voice communication
words (language)

∞ **conversion**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bioconversion
conversion tables
data conversion routines
electric generators
energy conversion
energy conversion efficiency
exchanging
frequency converters
geothermal energy conversion
internal conversion
isomerization
liquefaction
metrication
ocean thermal energy conversion
organic wastes (fuel conversion)
ortho para conversion
photothermal conversion
photovoltaic conversion
refining
satellite solar energy conversion
solar energy conversion
solar total energy systems
thermionic power generation
thermoelectric power generation
turbogenerators
waterwave energy conversion

conversion tables
GS tables (data)
. **conversion tables**
RT ∞ conversion
data converters
International System of Units
units of measurement

convertaplanes
USE **V/STOL aircraft**

∞ **converters**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Rotary devices for changing alternating current to direct current. Transducers whose output is a different frequency from its input.
RT analog to digital converters
binary to decimal converters
current converters (AC to DC)
data converters
digital to analog converters
direct power generators
down–converters
electric generators
frequency converters
image converters
instrument transformers
inverted converters (DC to AC)
parametric frequency converters
power converters
pulse width amplitude converters
pyrometallurgy
solar blankets
thermionic converters
torque converters
transducers
transformers
up–converters
voltage converters (AC to AC)
voltage converters (DC to DC)

convertible fan–shaft engines
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **convertible fan–shaft engines**
. aircraft engines
. . **convertible fan–shaft engines**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **convertible fan–shaft engines**

. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **convertible fan–shaft engines**
RT helicopter engines
jet thrust
propulsion system configurations
rotary wings
TF–34 engine
turboshafts
V/STOL aircraft
variable cycle engines
vertical takeoff aircraft

convexity
GS **shapes**
. **convexity**
RT concavity
contour sensors
contours
flatness
lenticular bodies
∞ surface geometry

conveyors
RT automated guideway transit vehicles
automated transit vehicles
chutes
cranes
elevators (lifts)
feeders
forks
∞ lifts
materials handling
ribbons
rollers
scoops
∞ tracks
transportation

convolution integrals
UF *convolutions (mathematics)*
GS analysis (mathematics)
. functional analysis
. . **convolution integrals**
integrals
. **convolution integrals**
RT integral transformations
trellis coding

convolutions (mathematics)
USE **convolution integrals**

convulsions
RT human pathology
muscles
psychotherapy
seizures
∞ shock

Cook Inlet (AK)
GS landforms
. inlets (topography)
. . **Cook Inlet (AK)**
RT Alaska

Cookpot aircraft
USE **TU–124 aircraft**

cool stars
GS celestial bodies
. stars
. . late stars
. . . **cool stars**
. . . . carbon stars
. . . . flare stars
. . . . K stars
. . . . M stars
. . . . . Van Biesbroeck star
. . . . Mira variables
. . . . . Omicron Ceti star
. . . . S stars
RT brown dwarf stars
giant stars
R Coronae Borealis stars
stellar atmospheres
stellar envelopes
stellar spectra
stellar temperature

coolant loss
USE **loss of coolant**

coolants
DEF Liquids of gases used to cool something, as a rocket combustion chamber.
GS **coolants**
. engine coolants
. organic coolants
RT air conditioning
air cooling
brines
coolers
cooling
cooling systems
freon
gas cooling
heat exchangers
liquid cooling
loss of coolant
nuclear reactors
reactor materials
refrigerants
sodium cooling

coolers
RT air conditioning
air conditioning equipment
air cooling
compressors
coolants
cooling
cooling systems
cryogenic cooling
refrigerating
refrigerating machinery
refrigerators

cooling
UF *chilling*
heat dissipation
heat dissipation chilling
GS **cooling**
. absorption cooling
. air cooling
. evaporative cooling
. . film cooling
. . sweat cooling
. gas cooling
. laser cooling
. liquid cooling
. . film cooling
. magnetic cooling
. plasma cooling
. precooling
. quenching (cooling)
. . rapid quenching (metallurgy)
. radiant cooling
. regenerative cooling
. sodium cooling
. solar cooling
. solid cryogen cooling
. space cooling (buildings)
. supercooling
. . cryogenic cooling
. surface cooling
. thermoelectric cooling
. thermomagnetic cooling
RT ablation
ablative materials
air conditioning
bathing
condensing
contraction
coolants
coolers
cooling flows (astrophysics)
cryogenics
engine coolants
film condensation
freezing
freon
geothermal energy utilization
heat exchangers
heat radiators
heat shielding
heat transfer
heating
Hilsch tubes
jackets
low temperature
melting
mushy zones
refrigerating
reusable heat shielding
spacecraft radiators
temperature control
temperature distribution
thermal cycling tests
thermal shock
thermal stresses
transpiration
ventilation
ventilation fans
venting
wetting

cooling fins
GS fins
. **cooling fins**
RT condensers (liquefiers)
convective heat transfer
finned bodies
heat exchangers
heat radiators
radiative heat transfer

cooling flows (astrophysics)
GS fluid flow
. gas flow
. . **cooling flows (astrophysics)**
RT accretion disks
cooling
cosmic gases
dark matter
galactic clusters
galactic evolution
intergalactic media
interstellar gas
star formation
x ray sources

cooling systems
RT absorbers (equipment)
air conditioning
air conditioning equipment
air cooling
air filters
blowers
closed cycles

condensers (liquefiers)
coolants
coolers
dehumidification
engine coolants
Ettingshausen effect
evaporative cooling
evaporators
exhaust systems
freon
heat exchangers
heat pumps
heat radiators
heat sinks
infrared suppression
intake systems
liquid cooling
lubrication systems
refrigerants
refrigerating
refrigerating machinery
registers (air circulation)
solar cooling
solid cryogens
space cooling (buildings)
spacecraft radiators
∞ systems
temperature control
temperature distribution
transpiration
ventilation
ventilation fans
vents

∞ **cooperation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT conventions
employee relations
international cooperation
public relations
sea law

coordinate geometry language
USE **COGO (programming language)**

coordinate systems
USE **coordinates**

coordinate transformations
GS functions (mathematics)
. **coordinate transformations**
transformations (mathematics)
. **coordinate transformations**
RT conformal mapping
invariant imbeddings
isoparametric finite elements
isotropic turbulence
Joukowski transformation
Schwarzschild metric
Theodorsen transformation

coordinates
DEF Sets of measures defining points in space. Used for axes (coordinates) and coordinate systems.
UF *axes (coordinates)*
coordinate systems
GS **coordinates**
. astronomical coordinates
. Cartesian coordinates
. computational grids
. . structured grids (mathematics)
. . . multiblock grids
. . unstructured grids (mathematics)
. cylindrical coordinates
. geodetic coordinates
. Hylleraas coordinates
. hyperbolic coordinates
. inertial coordinates
. Lagrange coordinates
. oblique coordinates
. planetocentric coordinates
. . geocentric coordinates
. polar coordinates
. spherical coordinates
RT algebra
analytic geometry
axes (reference lines)
celestial reference systems
Earth axis
equators
Euclidean geometry
fractals
Fujita method
geomagnetic latitude
geometry
grid generation (mathematics)
∞ grids
half planes
half spaces
latitude
line of sight
longitude
manifolds (mathematics)
maps
∞ nets
∞ origins
position (location)
∞ reference systems

coordination
RT continuity
correlation
interfaces
sequencing
time sharing

coordination polymers
RT∞ polymers

Copernicus spacecraft
USE **OAO 3**

copilots
USE **aircraft pilots**

coplanarity
GS analysis (mathematics)
. calculus
. . vector analysis
. . . **coplanarity**
. real variables
. . vector analysis
. . . **coplanarity**
geometry
. vector analysis
. . **coplanarity**

copolymerization
GS chemical reactions
. **copolymerization**
synthesis (chemistry)
. polymerization
. . **copolymerization**
RT block copolymers
dimerization
∞ polymers
vinyl copolymers

copolymers
DEF Polymers formed from two or more types of monomers.
GS **copolymers**
. block copolymers
. vinyl copolymers
. Viton rubber (trademark)
RT KEL-F
polymer blends
∞ polymers

copper
GS chemical elements
. **copper**
. . copper isotopes
metals
. transition metals
. . **copper**
. . . copper isotopes
RT ammines
constantan
selenium alloys

copper alloys
GS alloys
. **copper alloys**
. . babbitt metal
. . brasses
. . bronzes
. . Manganin (trademark)
RT aluminum-lithium alloys
bearing alloys
gold alloys
lamella (metallurgy)
lithium alloys

copper chlorides
GS copper compounds
. **copper chlorides**
halogen compounds
. chlorine compounds
. . chlorides
. . . **copper chlorides**
. halides
. . chlorides
. . . **copper chlorides**
. . metal halides
. . . **copper chlorides**

copper compounds
GS **copper compounds**
. copper chlorides
. copper fluorides
. copper oxides
. copper selenides
. . copper indium selenides
. copper sulfides
RT∞ chemical compounds
Group 1B compounds
∞ metal compounds

copper fluorides
GS copper compounds
. **copper fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **copper fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **copper fluorides**
. . metal halides
. . . metal fluorides
. . . . **copper fluorides**

copper indium selenides
(added June 1995)
GS chalcogenides
. selenides
. . copper selenides
. . . **copper indium selenides**

. . indium selenides
. . . **copper indium selenides**
copper compounds
. copper selenides
. . **copper indium selenides**
indium compounds
. indium selenides
. . **copper indium selenides**
selenium compounds
. **selenides**
. . copper selenides
. . . **copper indium selenides**
. . indium selenides
. . . **copper indium selenides**
RT semiconductors (materials)
solar cells
thin films

copper isotopes
GS chemical elements
. copper
. . **copper isotopes**
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . **copper isotopes**
metals
. transition metals
. . copper
. . . **copper isotopes**

copper oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **copper oxides**
copper compounds
. **copper oxides**
RT BSCCO superconductors
thermites
YBCO superconductors

copper selenides
GS chalcogenides
. selenides
. . **copper selenides**
. . . copper indium selenides
copper compounds
. **copper selenides**
. . copper indium selenides
selenium compounds
. selenides
. . **copper selenides**
. . . copper indium selenides

copper sulfides
GS chalcogenides
. sulfides
. . inorganic sulfides
. . . **copper sulfides**
copper compounds
. **copper sulfides**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **copper sulfides**

copyrights
GS intellectual property
. **copyrights**
RT documents
licensing
patent applications
policies
regulations

coral heads
USE **coral reefs**

coral reefs
UF *atoll reefs*
coral heads
RT atolls
coasts
islands
keys (islands)
reefs

cordage
RT cables (ropes)
ceramic fibers
connectors
cotton
fibers
∞ filaments
strands
strings
wire
yarns

Cordelia
(added January 1996)
DEF A natural satellite of Uranus orbiting at a mean distance of 49,750 kilometers.
GS celestial bodies
. natural satellites
. . Uranus satellites
. . . **Cordelia**
RT Uranus (planet)

cordierite
GS aluminum compounds
. **cordierite**
iron compounds
. **cordierite**
magnesium compounds
. **cordierite**
minerals
. **cordierite**
silicon compounds
. silicates
. . **cordierite**

cordite
USE **colloidal propellants**
double base propellants

core flow
GS fluid flow
. **core flow**
RT flow geometry
magnetohydrodynamic flow
one dimensional flow
plasmas (physics)
shear flow

core sampling
GS sampling
. **core sampling**
RT cores
depth measurement
drilling
Earth crust
hydrogeology
mines (excavations)
ocean bottom
ocean currents
oceanography
particle tracks
salinity
samplers

core storage
UF *machine storage*
GS computer components
. computer storage devices
. . random access memory
. . . **core storage**
magnetic storage
. **core storage**
memory (computers)
. random access memory
. . **core storage**
RT bubble memory devices
buffer storage
data storage
magnetic disks
magnetic drums
∞ storage

core–mantle boundary
(added August 1994)
GS boundaries
. **core–mantle boundary**
RT boundary layers
Earth core
Earth mantle
lunar mantle
planetary boundary layer
planetary cores
planetary mantles
regolith
tectonics

cores
GS **cores**
. honeycomb cores
. lunar core
. magnetic cores
. planetary cores
. . Earth core
. reactor cores
. stellar cores
RT ∞ cells
core sampling
mandrels
molding materials

Coriolis effect
DEF The physiological effect felt by a person moving radially in a rotating system, as a rotating space station resulting in nausea vertigo, dizziness, etc. Named after Gaspard G. Coriolis (d 1843), French civil engineer.
RT disorientation
∞ effects
gyres
Kelvin waves
meteorology
planetary waves
rotating environments
rotation
vestibular tests

cork (materials)
GS wood
. **cork (materials)**
RT ∞ materials
organic materials
thermal insulation

corn
GS farm crops
. grains (food)
. . **corn**
plants (botany)
. **corn**
RT agriculture
blight
bollworms
botany
crop growth
∞ crops
curing

Earth resources
∞ food
irrigation
seeds

cornea
GS anatomy
. sense organs
. . eye (anatomy)
. . . **cornea**
RT keratitis
vision

corner flow
GS fluid flow
. **corner flow**
RT cavity flow
channel flow
ducted flow
∞ flow
nozzle flow
secondary flow

corners
RT angles (geometry)
antennas
joints (junctions)
shapes

Corona Borealis constellation
GS constellations
. **Corona Borealis constellation**
RT celestial bodies
celestial sphere
stars

corona discharges
USE **electric corona**

coronagraphs
RT astronomical photography
solar observatories
spectroheliographs
Starsat telescope
telescopes

coronal holes
DEF Solar areas where extreme UV and x ray coronal emission is abnormally low or absent. These are coronal regions apparently associated with diverging magnetic fields.
GS coronas
. stellar coronas
. . solar corona
. . . **coronal holes**
RT decametric waves
∞ holes
radio astronomy
solar radio emission
solar wind
solar x-rays
stellar structure
ultraviolet radiation

coronal loops
DEF Loop like structures revealed in soft x ray images of the solar limb and believed to evolve from the introduction of energy and density perturbations at the top of an arched, cylindrical magnetic flux tube initially in equilibrium in the coronal plasma.
GS coronas
. stellar coronas
. . solar corona
. . . **coronal loops**
RT chromosphere
coronal mass ejection
solar flares
solar limb

coronal mass ejection
(added June 1997)
GS ejection
. stellar mass ejection
. . **coronal mass ejection**
RT coronal loops
solar corona
solar flares
solar wind
stellar coronas

coronary artery disease
GS diseases
. heart diseases
. . **coronary artery disease**
RT angina pectoris
arteriosclerosis
myocardial infarction

coronary circulation
GS circulation
. blood circulation
. . **coronary circulation**
RT heart
heart valves

coronas
GS **coronas**
. electric corona
. stellar coronas
. . solar corona
. . . coronal holes
. . . coronal loops
RT electric arcs
electric discharges
halos
ionization
solar spectra

corotation
GS gyration
. rotation
. . **corotation**
RT astronomical models
Earth magnetosphere
galactic rotation
galactic structure
spiral galaxies
stellar motions
stellar rotation

Corporal missile
GS missiles
. surface to surface missiles
. . **Corporal missile**
RT liquid propellant rocket engines

corpuscles (blood)
USE **blood cells**

corpuscular radiation
SN (LIMITED TO NONELECTROMAGNETIC RADIATION CONSISTING OF ENERGETIC CHARGED OR NEUTRAL PARTICLES)
DEF Nonelectromagnetic radiation consisting of energetic charged or neutral particles. Used for penetrating particles.
UF *penetrating particles*
GS particles
. **corpuscular radiation**
. . electron precipitation
. . electron radiation
. . . beta particles
. . . electron beams
. . . . relativistic electron beams
. . energetic particles
. . . electrons
. . . . conduction electrons
. . . . free electrons
. . . . high energy electrons
. . . . . relativistic electron beams
. . . . hot electrons
. . . . N electrons
. . . . negatrons
. . . . photoelectrons
. . . . pi-electrons
. . . . polarons
. . . . solar electrons
. . . nuclei (nuclear physics)
. . . . alpha particles
. . . . deuterons
. . . . even-even nuclei
. . . . heavy nuclei
. . . . hypernuclei
. . . . odd-even nuclei
. . . . odd-odd nuclei
. . . . tritons
. . . plasmas (physics)
. . . . argon plasma
. . . . beta particles
. . . . boundary layer plasmas
. . . . cold plasmas
. . . . collisional plasmas
. . . . . strongly coupled plasmas
. . . . collisionless plasmas
. . . . cosmic plasma
. . . . cylindrical plasmas
. . . . dense plasmas
. . . . . plasma focus
. . . . . strongly coupled plasmas
. . . . electron plasma
. . . . electron-positron plasmas
. . . . elliptical plasmas
. . . . helium plasma
. . . . high temperature plasmas
. . . . hydrogen plasma
. . . . . deuterium plasma
. . . . laser plasmas
. . . . metallic plasmas
. . . . . cesium plasma
. . . . . uranium plasmas
. . . . microplasmas
. . . . nitrogen plasma
. . . . nonequilibrium plasmas
. . . . nonuniform plasmas
. . . . oxygen plasma
. . . . rarefied plasmas
. . . . relativistic plasmas
. . . . rotating plasmas
. . . . semiconductor plasmas
. . . . space plasmas
. . . . . solar wind
. . . . . stellar winds
. . . . spherical plasmas
. . . . thermal plasmas
. . . . toroidal plasmas
. . primary cosmic rays
. . . solar cosmic rays
. . radiation belts
. . . artificial radiation belts
. . . inner radiation belt
. . . outer radiation belt
. . . proton belts
. . solar corpuscular radiation
. . . solar electrons
. . . solar neutrinos
. . . solar neutrons
. . . solar protons
RT alpha particles
atmospheric radiation
background radiation
beams (radiation)
Cerenkov radiation
charged particles
coherent radiation

continuous radiation
cosmic rays
electromagnetic radiation
extraterrestrial radiation
flux (rate)
galactic radiation
incident radiation
interstellar radiation
ionizing radiation
ions
mesons
neutrons
nuclear particles
nuclear radiation
nuclei (nuclear physics)
particle production
phonon beams
pulsed radiation
∞ radiation
radiation distribution
radiation pressure
radiation sources
∞ rays
reflected waves
refracted waves
solar radiation
solar terrestrial interactions
stratosphere radiation

correction
DEF A quantity, equal in absolute magnitude to the error, added to a calculated or observed value to obtain a true value.
GS **correction**
. atmospheric correction
. optical correction procedure
RT accommodation
accuracy
adaptation
adjusting
alignment
error correcting devices
errors
improvement
information theory
parity
redundancy
revisions
vegetative index

correlation
DEF In statistics, a relationship between two occurrences which is expressed as a number between minus one (−1) and plus one (+1). Used for correlation functions.
UF *correlation functions*
GS **correlation**
. angular correlation
. autocorrelation
. correlation coefficients
. correlation detection
. cross correlation
. data correlation
. spectral correlation
. statistical correlation
RT bivariate analysis
collating
confidence
contingency
coordination
covariance
∞ estimators
evaluation
factor analysis
forecasting
information theory
least squares method
multivariate statistical analysis
optimization
probability theory
quality control
regression analysis
regression coefficients
significance
statistical analysis
teleconnections (meteorology)
time series analysis
validity
variability
variance (statistics)

correlation coefficients
GS coefficients
. **correlation coefficients**
correlation
. **correlation coefficients**
statistical analysis
. **correlation coefficients**
RT quality control
statistical correlation

correlation detection
DEF A method of detection in which a signal is compared, point-to-point, with an internally generated reference.
GS correlation
. **correlation detection**
detection
. signal detection
. . **correlation detection**
RT ∞ detectors
electromagnetic wave filters
phase lock demodulators
signal to noise ratios

correlation functions
USE **correlation**

correlators
SN (LIMITED TO DEVICES THAT DETECT WEAK SIGNALS IN NOISE BY PERFORMING AN ELECTRONIC OPERATION)
DEF Devices that detect weak signals in noise by performing an electronic operation. Used for synchronous detectors.
UF *synchronous detectors*
GS **correlators**
. image correlators
. optical correlators
RT synchroscopes

corridors
GS **corridors**
. Great Plains Corridor (North America)
. St Louis–Kansas City Corridor (MO)
RT passageways

corrosion
DEF The deterioration of a metal by chemical or electrochemical reaction with its environment. Used for metal corrosion.
UF *metal corrosion*
GS **corrosion**
. cavitation corrosion
. electrochemical corrosion
. fretting corrosion
. fuel corrosion
. hot corrosion
. intergranular corrosion
. rusting
. scale (corrosion)
. stress corrosion
. . stress corrosion cracking
. transgranular corrosion
RT chemical attack
chemical reactions
coatings
damage
degradation
deposits
deterioration
dissolving
durability
electrochemistry
electrolysis
erosion
etchants
etching
failure
finishes
fouling
gas–metal interactions
humidity
impingement
incompatibility
metal coatings
∞ metallurgy
metal–water reactions
oxidation
passivity
pitting
protective coatings
salt spray tests
sterilization effects
surface properties
tribology
wear
weathering

corrosion prevention
GS prevention
. **corrosion prevention**
protection
. **corrosion prevention**
RT aeration
antifouling
antioxidants
cavitation corrosion
chemical attack
cleaning
coating
coatings
desensitizing
∞ films
fuel tanks
∞ inhibition
inhibitors
metal coatings
nickel coatings
packaging
passivity
preserving
propellant additives
sensitizing
siliconizing
surface finishing
surface treatment
water treatment
weatherproofing

corrosion resistance
GS **corrosion resistance**
. oxidation resistance
RT antioxidants
cavitation corrosion
chemical attack
chemical tests
passivity
pitting
∞ resistance
rusting
salt spray tests

siliconizing
sulfidation
surface finishing

corrosion test loops
GS environmental tests
. corrosion tests
. . **corrosion test loops**
loops
. **corrosion test loops**
RT ∞ tests

corrosion tests
GS environmental tests
. **corrosion tests**
. . corrosion test loops
. . **salt spray tests**
RT cavitation corrosion
chemical attack
destructive tests
fuel tests
∞ materials tests
pitting
propellant tests
stability tests
stress corrosion cracking
∞ tests
transgranular corrosion
underwater tests
weathering

corrugated plates
GS structural members
. plates (structural members)
. . **corrugated plates**
RT corrugating
reinforced plates

corrugated shells
GS shells (structural forms)
. **corrugated shells**
RT anisotropic shells
corrugating
reinforced shells

corrugating
RT corrugated plates
corrugated shells
deformation
grooves
∞ plates
∞ ridges
∞ waves

Corsair aircraft
USE **A-7 aircraft**

∞ **cortexes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cerebral cortex
cortexes (botany)

cortexes (botany)
RT ∞ cortexes
plants (botany)

Corti organ
GS anatomy
. **sense organs**
. . **ear**
. . . labyrinth
. . . . cochlea
. . . . . **Corti organ**

corticosteroids
GS organic compounds
. lipids
. . steroids
. . . **corticosteroids**
. . . . aldosterone
. . . . hydroxycorticosteroid
. . . . . cortisone
secretions
. endocrine secretions
. . hormones
. . . **corticosteroids**
. . . . aldosterone
. . . . hydroxycorticosteroid
. . . . . cortisone
RT adrenal metabolism

cortisone
GS drugs
. **cortisone**
organic compounds
. lipids
. . steroids
. . . corticosteroids
. . . . hydroxycorticosteroid
. . . . . **cortisone**
secretions
. endocrine secretions
. . hormones
. . . corticosteroids
. . . . hydroxycorticosteroid
. . . . . **cortisone**
RT adrenal metabolism
carbohydrate metabolism

corundum
USE **aluminum oxides**

Corvus missile
GS missiles
. **Corvus missile**
RT liquid propellant rocket engines

COS-B satellite
GS artificial satellites
. ESA satellites
. . **COS-B satellite**
ESA spacecraft
. ESA satellites
. . **COS-B satellite**
RT Europa 2 launch vehicle
European space programs
gamma ray sources (astronomy)

cosine series
GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . **cosine series**
. real variables
. . differential equations
. . . **cosine series**
. . periodic functions
. . . trigonometric functions
. . . . **cosine series**
. . series (mathematics)
. . . **cosine series**
functions (mathematics)
. transcendental functions
. . periodic functions
. . . trigonometric functions
. . . . **cosine series**
RT wavelet analysis

Cosmic Background Explorer satellite
DEF A NASA satellite launched on November 18, 1989 on a Delta I expendable launch vehicle. It is designed to measure backgound radiation in order to confirm or deny the big bang theory. Used for COBE.
UF *COBE*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **Cosmic Background Explorer satellite**
RT background radiation
radiation spectra
spaceborne astronomy

cosmic dust
DEF Finely divided solid matter with particle sizes smaller than a micrometeorite, thus with diameters much smaller than a millimeter, moving in interplanetary space.
GS extraterrestrial matter
. interstellar matter
. . **cosmic dust**
. . . interplanetary dust
. . . . meteoroid dust clouds
. . . . . zodiacal dust
particles
. dust
. . **cosmic dust**
. . . interplanetary dust
. . . . meteoroid dust clouds
. . . . . zodiacal dust
RT infrared cirrus (astronomy)
intergalactic media
meteoroids
micrometeorites
micrometeoroids
molecular clouds
organic solids
polycyclic aromatic hydrocarbons
reflection nebulae
space debris
terrestrial dust belt
Venus fly trap rocket vehicle

cosmic gamma ray bursts
USE **gamma ray bursts**

cosmic gases
GS extraterrestrial matter
. **cosmic gases**
. . interplanetary gas
. . interstellar gas
gases
. rarefied gases
. . **cosmic gases**
. . . interplanetary gas
. . . interstellar gas
RT cooling flows (astrophysics)
degenerate matter
electron gas
intergalactic media
ionized gases
neutral gases

cosmic noise
DEF Interference caused by cosmic radio waves.
GS electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . **cosmic noise**
RT Alouette project
background noise
background radiation
centimeter waves
electromagnetic noise measurement
galactic radiation
galactic radio waves
interstellar radiation
microwave emission
microwaves
noise storms
solar radiation

solar radio emission

cosmic plasma
GS extraterrestrial matter
. **cosmic plasma**
particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **cosmic plasma**
. corpuscular radiation
. . **energetic particles**
. . . plasmas (physics)
. . . . **cosmic plasma**
RT intergalactic media
interplanetary gas
plasma clouds
plasmapause
relativistic plasmas
solar wind
stellar winds
strongly coupled plasmas

cosmic radiation
USE **cosmic rays**

cosmic radio waves
USE **extraterrestrial radio waves**

cosmic ray albedo
GS albedo
. **cosmic ray albedo**
RT absorptance
∞ absorption
atmospheric attenuation
Earth albedo
lunar albedo
primary cosmic rays
reflectance
secondary cosmic rays

cosmic ray showers
UF *air showers*
Auger showers
Molière formula
GS ionizing radiation
. cosmic rays
. . **cosmic ray showers**
RT Auger effect
∞ cascades
electron photon cascades
secondary cosmic rays
∞ showers

cosmic rays
DEF The aggregate of extremely high energy subatomic particles which travel the solar system and bombard the earth from all directions. Cosmic ray primaries seem to be mostly protons, hydrogen nuclei, but also contain heavier nuclei. On colliding with atmospheric particles thay pr duce many different kinds of lower energy secondary cosmic radiation. Used for cosmic radiation.
UF *cosmic radiation*
GS ionizing radiation
. **cosmic rays**
. . cosmic ray showers
. . galactic cosmic rays
. . gamma ray bursts
. . primary cosmic rays
. . . solar cosmic rays
. . secondary cosmic rays
RT aerospace environments
albedo
alpha particles
big bang cosmology
Cerenkov radiation
corpuscular radiation
deuterons
electromagnetic radiation
electron acceleration
electrons
extraterrestrial radiation
Forbush decreases
galactic radiation
gamma ray telescopes
gamma rays
heliosphere
interstellar radiation
ion density (concentration)
mesons
neutrons
nuclear particles
nuclei (nuclear physics)
particle tracks
photons
protons
∞ radiation
radiation belts
radiative transfer
scintillating fibers
single event upsets
solar radiation
stellar radiation
VLF emission recorders
x rays

cosmic x rays
GS electromagnetic radiation
. x rays
. . **cosmic x rays**
ionizing radiation
. x rays
. . **cosmic x rays**
RT extraterrestrial radiation
galactic radiation
gamma ray astronomy
gamma ray bursts
gamma rays
x ray astronomy
x ray binaries
x ray sources

cosmochemistry
DEF The branch of chemistry that deals with the chemical composition and changes in the universe.
RT ∞ chemistry
cosmology
extraterrestrial matter
geochemistry
interstellar chemistry
isotope ratios
meteoritic composition

cosmogony
USE **cosmology**

cosmology
UF *cosmogony*
GS **cosmology**
. big bang cosmology
. Hubble diagram
. missing mass (astrophysics)
RT astronomical models
astrophysics
cosmochemistry
dark matter
event horizon
existence
galactic evolution
grand unified theory
gravitinos
Hubble constant
local group (astronomy)
mass distribution
naked singularities
nuclear astrophysics
planetary evolution
protoplanets
red shift
star distribution
star formation
stellar evolution
stellar mass accretion
string theory
supergravity
supersymmetry
universe
white holes (astronomy)

cosmonauts
GS personnel
. flying personnel
. . **cosmonauts**
RT ∞ astronautics
astronauts
crew experiment stations
crew observation stations
crew workstations
crews
pilots (personnel)
Russian Space Program
spacecrews

∞ **cosmos**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Cosmos satellites
universe

Cosmos satellites
GS artificial satellites
. geophysical satellites
. . **Cosmos satellites**
. . . Cosmos 2 satellite
. . . Cosmos 3 satellite
. . . Cosmos 5 satellite
. . . Cosmos 6 satellite
. . . Cosmos 14 satellite
. . . Cosmos 44 satellite
. . . Cosmos 54 satellite
. . . Cosmos 71 satellite
. . . Cosmos 110 satellite
. . . Cosmos 137 satellite
. . . Cosmos 144 satellite
. . . Cosmos 149 satellite
. . . Cosmos 166 satellite
. . . Cosmos 186 satellite
. . . Cosmos 188 satellite
. . . Cosmos 206 satellite
. . . Cosmos 213 satellite
. . . Cosmos 224 satellite
. . . Cosmos 225 satellite
. . . Cosmos 381 satellite
. . . Cosmos 954 satellite
. . . Cosmos 1129 satellite
. . . Intercosmos satellites
. Soviet satellites
. . **Cosmos satellites**
. . . Cosmos 2 satellite
. . . Cosmos 3 satellite
. . . Cosmos 5 satellite
. . . Cosmos 6 satellite
. . . Cosmos 14 satellite
. . . Cosmos 44 satellite
. . . Cosmos 54 satellite
. . . Cosmos 71 satellite
. . . Cosmos 110 satellite
. . . Cosmos 137 satellite
. . . Cosmos 144 satellite

. . . Cosmos 149 satellite
. . . Cosmos 166 satellite
. . . Cosmos 186 satellite
. . . Cosmos 188 satellite
. . . Cosmos 206 satellite
. . . Cosmos 213 satellite
. . . Cosmos 224 satellite
. . . Cosmos 225 satellite
. . . Cosmos 381 satellite
. . . Cosmos 954 satellite
. . . Cosmos 1129 satellite
. . . Intercosmos satellites
RT ∞ cosmos

Cosmos 2 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 2 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 2 satellite**

Cosmos 3 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 3 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 3 satellite**

Cosmos 5 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 5 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 5 satellite**

Cosmos 6 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 6 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 6 satellite**

Cosmos 14 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 14 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 14 satellite**

Cosmos 44 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 44 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 44 satellite**

Cosmos 54 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 54 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 54 satellite**

Cosmos 71 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 71 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 71 satellite**

Cosmos 110 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 110 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 110 satellite**

Cosmos 137 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 137 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 137 satellite**

Cosmos 144 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 144 satellite**
. meteorological satellites
. . **Cosmos 144 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 144 satellite**

Cosmos 149 satellite
UF *Space Arrow satellite*
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 149 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 149 satellite**

Cosmos 166 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 166 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 166 satellite**

Cosmos 186 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 186 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 186 satellite**

Cosmos 188 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 188 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 188 satellite**

Cosmos 206 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 206 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 206 satellite**

Cosmos 213 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 213 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 213 satellite**

Cosmos 224 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 224 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 224 satellite**

Cosmos 225 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 225 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 225 satellite**

Cosmos 381 satellite
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 381 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 381 satellite**

Cosmos 782 satellite
DEF One in a series of satellites launched by the USSR reportedly for geophysical observations.
GS artificial satellites
. Soviet satellites
. . **Cosmos 782 satellite**
RT international cooperation

Cosmos 936 satellite
DEF One in a series of satellites launched by the USSR reportedly for geophysical observations.
GS artificial satellites
. Soviet satellites
. . **Cosmos 936 satellite**
RT international cooperation

Cosmos 954 satellite
DEF A Russian ocean surveillance satellite which reentered over Canada spreading radioactive debris.
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 954 satellite**
. Soviet satellites
. . Cosmos satellites
. . . **Cosmos 954 satellite**
RT uncontrolled reentry (spacecraft)

Cosmos 1129 satellite
DEF Soviet VOSTOK biological spacecraft launched on September 25, 1979 carrying experiments from several nations. NASA contributed 13 experiments.
GS artificial satellites
. geophysical satellites
. . Cosmos satellites
. . . **Cosmos 1129 satellite**
. Soviet satellites
. . Cosmos satellites

. . . **Cosmos 1129 satellite**
RT international cooperation

COSPAR (committee)
USE **Committee on Space Research**

COSPAS
DEF The USSR satellite of the COSPAS–SarSat project which is a satellite-aided project for the search and rescue of distressed vehicles, administered by USSR, US, French, and Canadian agencies.
GS artificial satellites
. **COSPAS**
RT reconnaissance
rescue operations
SarSat
searching

Cosserat surfaces
RT flat surfaces
∞ surface geometry
surface properties
∞ surfaces

cost analysis
RT ∞ analyzing
budgeting
comparison
costs
design to cost
economic analysis
feasibility
feasibility analysis
financial management
life cycle costs
management
management analysis
management planning
optical transfer function
production costs
proposals
value engineering
wage surveys

cost effectiveness
GS effectiveness
. **cost effectiveness**
RT allocations
budgeting
life cycle costs

cost estimates
GS estimates
. **cost estimates**
RT aircraft production costs
appropriations
budgeting
costs
economic analysis
economy
∞ estimators
federal budgets
financial management
management
production costs
value engineering
wage surveys

cost incentives
RT efficiency
incentive techniques
management
value engineering

cost reduction
RT commonality
efficiency
incentive techniques
launch costs
management
management methods
management planning
small satellite technology
value engineering
wage surveys

Costa Rica
GS nations
. **Costa Rica**
RT Central America

costs
GS **costs**
. freight costs
. launch costs
. life cycle costs
. low cost
. operating costs
. production costs
. . aircraft production costs
RT accounting
aircraft production
commerce
cost analysis
cost estimates
damage assessment
design to cost
economic analysis
economic factors
economic impact
economics
efficiency
estimating
evaluation
feasibility
financial management
gross national product
revenue
task complexity
tasks
value

Cote d'Ivoire
(added September 1993)
UF *Ivory Coast*
GS nations
. **Cote d'Ivoire**
RT Africa

cotton
GS farm crops
. **cotton**
plants (botany)
. **cotton**
RT boll weevils
bollworms
clothing
cordage
cotton fibers
Earth resources
fabrics
fibers
textiles
yarns

cotton fibers
GS clothing
. **cotton fibers**
fibers
. **cotton fibers**
textiles
. **cotton fibers**
RT cotton
crepe
organic materials

couches
RT beds
cushions
harnesses
seats

Couette flow
GS fluid flow
. steady flow
. . **Couette flow**
. two dimensional flow
. . **Couette flow**
. viscous flow
. . **Couette flow**
RT annular flow
axisymmetric flow
Hartmann flow
internal flow
rotating cylinders

Cougar aircraft
USE **F-9 aircraft**

cough
GS reflexes
. respiratory reflexes
. . **cough**
signs and symptoms
. **cough**
RT expellants

coulees
USE **canyons**

Coulomb collisions
DEF The collisions of sets of two particles both of which are charged.
GS collisions
. **Coulomb collisions**
RT charged particles

Coulomb potential
GS potential energy
. electric potential
. . **Coulomb potential**
RT charged particles
coulometry
electric field strength
electric fields
∞ potential

coulometers
DEF Electrolytic cells or electronic devices arranged to measure the quantity of electricity by the chemical action produced in accordance with Faraday's law.
GS measuring instruments
. **coulometers**
RT ammeters
chemical analysis
coulometry
electrical measurement
electrochemistry
electrodeposition
electrolysis
titration
voltmeters

coulometry
GS electrical measurement
. **coulometry**
electrochemistry
. electrolysis
. . **coulometry**
RT Coulomb potential
coulometers

countdown
DEF A step–by–step process that culminates in a climactic event, each step being performed in accordance with a schedule marked by a count in inverse numerical order; specifically, this process is used in leading up to the launch of a large of complicated rocket vehicle, or in leading up to a captive test, a readiness firing, a mock firing or other firing test.
GS preflight operations
. **countdown**
schedules
. **countdown**
RT checkout
crew procedures (preflight)
laun hing
liftoff (launching)
prelaunch problems
prelaunch tests
space vehicle checkout program
spacecraft launching
windows (intervals)

counter rotation
DEF Movement of sets of bodies or fluids around a common axis where movement in own rotational direction is opposed by movement in the opposite direction.
GS gyration
. rotation
. . **counter rotation**
RT boundary value problems
counterflow
counter–rotating wheels
rotating disks
rotating fluids

counter–rotating wheels
UF *inertia wheels*
GS **wheels**
. **counter–rotating wheels**
RT counter rotation
flywheels
gears
mechanical drives
reaction wheels

counterbalances
RT aircraft stability
ballast (mass)
dynamic stability
mass distribution
spacecraft stability
static stability

counterflow
GS fluid flow
. **counterflow**
RT axial flow
counter rotation
heat exchangers
heat transfer
trapped vortices
turbulent diffusion
turbulent flow
vortices

counterinsurgency aircraft
USE **COIN aircraft**

countermeasures
GS **countermeasures**
. ballistic missile decoys
. electronic countermeasures
. . antiradar coatings
. . chaff
. jamming
. optical countermeasures
. reentry decoys
RT antiradiation missiles
Blue Goose missile
decoys
protection
quail missile
radar absorbers
target masking
torpedoes

counters
UF *dekatrons*
gas discharge counters
pulse recorders
quantizer
GS measuring instruments
. **counters**
. . radiation counters
. . . Cerenkov counters
. . . electron counters
. . . Geiger counters
. . . neutron counters
. . . . neutron spectrometers
. . . particle telescopes
. . . proportional counters
. . . quantum counters
. . . scintillation counters
. . . spark chambers
RT accumulators (computers)
computer components
counting
counting circuits
data recorders
ionization chambers
monitors
recording instruments

countersinking
RT grinding (material removal)
metal cutting

counting
RT counters
data acquisition
enumeration
estimating
∞ measurement
∞ numbers
observation
repetition
sampling

counting circuits
GS circuits
. **counting circuits**
. . scalers
RT counters
logic circuits

counting rate computers
GS data processing equipment
. computers
. . **counting rate computers**

coupled modes
DEF Modes of vibration that are not independent, but which influence one mode to the other. Used for mode coupling.
UF *mode coupling*
GS modes
. **coupled modes**
RT chemical bonds
couples
couplings
crosslinking
laser arrays
magnetosphere–ionosphere coupling
polymerization
strongly coupled plasmas
uncoupled modes

couplers
SN (EXCLUDES MECHANICAL DEVICE)
GS **couplers**
. antenna couplers
. . diplexers
. . directional couplers
. coupling circuits
RT antenna components
coupling
couplings
impedance matching
yokes

couples
RT antenna couplers
coupled modes
coupling circuits
cross coupling
diplexers
optical coupling
spin–spin coupling
uncoupled modes
yokes

coupling
SN (FOR MECHANICAL DEVICES, USE COUPLINGS)
GS **coupling**
. acoustic coupling
. cross coupling
. electromagnetic coupling
. . microwave coupling
. . optical coupling
. gyroscopic coupling
. magnetosphere–ionosphere coupling
. spin–spin coupling
. thermodynamic coupling
RT antenna couplers
Clebsch–Gordan coefficients
couplers
couplings
decoupling
directional couplers
linkages
mechanical drives
Racah coefficient
velocity coupling
wave interaction

coupling circuits
GS circuits
. **coupling circuits**
couplers
. **coupling circuits**
RT antenna couplers
couples
cross coupling
energy transfer
impedance matching
microwave coupling
RC circuits
RL circuits
transformers

coupling coefficients
GS coefficients
. **coupling coefficients**
RT form factors
magnetic induction
transfer functions

couplings
DEF Devices or contrivances for joining adjacent ends or parts of anything. Devices permitting transfer of energy from one electrical

circuit to another, or from one mechanical device to another.
RT anchors (fasteners)
bolts
clips
closures
connectors
coupled modes
couplers
coupling
directional couplers
fasteners
fittings
∞ joining
joints (junctions)
linkages
mechanical drives
pins
rivets
screws
sleeves
splines
trailers
unions (connectors)

Courier aircraft
USE **U-10 aircraft**

Courier satellite
GS artificial satellites
. **Courier satellite**
RT Advent Project

courses
USE **paths**

covalence
RT chemical bonds
covalent bonds

covalent bonds
GS chemical bonds
. **covalent bonds**
RT covalence

covariance
GS statistical analysis
. variance (statistics)
. . multivariate statistical analysis
. . . **covariance**
RT correlation
experiment design
factor analysis
orthogonality
quality control
regression analysis
significance
variability

coveralls
GS clothing
. **coveralls**
RT flight clothing
protective clothing

coverings
RT camouflage
∞ caps
∞ casing
closures
coatings
electrostatic bonding
enclosures
∞ envelopes
guards (shields)
housings
jackets
masking
netting (materials/structures)
preserving
sealing
shells (structural forms)
shrouds
spherical caps

coves
USE **bays (topographic features)**

Cowell method
USE **numerical integration**

cowlings
GS housings
. **cowlings**
RT air intakes
fairings
nacelles
pods (external stores)
protuberances
shells (structural forms)

Crab nebula
GS celestial bodies
. nebulae
. . **Crab nebula**
RT Orion nebula
supernovae
Taurus constellation

crabs
GS animals
. invertebrates
. . arthropods
. . . **crabs**

crack arrest
RT crack initiation
crack propagation
crack tips
cracking (fracturing)

crack bridging
(added March 1995)
DEF The occurence of unbroken material grains or reinforcing elements extending across the surfaces of a crack. A common occurrence in fiber composites and some ceramic materials, it contributes to improved crack growth resistance.
UF *fiber bridging*
grain bridging
RT ceramic matrix composites
crack opening displacement
crack propagation
fiber composites
fracture mechanics
metal matrix composites

crack closure
DEF Phenomenon which occurs when the cyclic plasticity of a material gives rise to the development of residual plastic deformations in the vicinity of a crack tip, causing the fatigue crack to close at positive load.
RT brittleness
cracking (fracturing)
cracks
Elber equation
fatigue (materials)
fractography
fracture mechanics
fracture strength
fracturing
Griffith crack
metal fatigue
microcracks
stress corrosion cracking
surface cracks

crack formation
USE **crack initiation**

crack geometry
DEF The shape and size of partial fractures or flaws in materials.
GS geometry
. **crack geometry**
RT cavities
crack tips
cracks
fatigue (materials)
fractography
microcracks
short cracks
surface cracks
voids

crack initiation
UF *crack formation*
RT brittleness
crack arrest
crack tips
cracks
critical loading
fracture mechanics
fracture strength
J integral
metal fatigue
metal surfaces
microcracks
short cracks
stress concentration
stress corrosion cracking
stress intensity factors
surface cracks
surface defects
toughness

crack opening displacement
(added September 1988)
DEF The displacement at the mouth of a crack in a material. Used for COD (cracks).
UF *COD (cracks)*
GS displacement
. **crack opening displacement**
RT crack bridging
crack propagation
cracking (fracturing)
cracks
fracture mechanics
fracture strength
fractures (materials)
fracturing
gaps
notch tests
notches
voids

crack propagation
GS propagation (extension)
. **crack propagation**
RT acoustic emission
bend tests
brittleness
Coffin-Manson law
crack arrest
crack bridging
crack opening displacement
crack tips
cracking (fracturing)
cracks
fatigue (materials)
fractography
fracture mechanics
fracture strength
fracturing

Griffith crack
J integral
metal fatigue
micromechanics
plane strain
∞ propagation
residual strength
∞ resistance
Segre characteristic
short cracks
strain distribution
stress corrosion cracking
stress distribution
stress intensity factors
surface cracks

crack tips
DEF The boundaries between cracked and uncracked material.
GS fractures (materials)
. cracks
. . **crack tips**
tips
. **crack tips**
RT crack arrest
crack geometry
crack initiation
crack propagation

cracking (chemical engineering)
DEF A process used to reduce the molecular weight of hydrocarbons by breaking molecular bonds by thermal, catalytic, or hydrocracking methods.
GS chemical reactions
. **cracking (chemical engineering)**
. . hydrocracking
. . pyrolysis
decomposition
. **cracking (chemical engineering)**
. . hydrocracking
. . pyrolysis
RT ammonolysis
catalysis
catalytic activity
chemical engineering
coal gasification
electrolysis
hydrocarbons
hydrogenolysis
hydrolysis
nitrolysis
organic chemistry
photolysis
thermal dissociation

cracking (fracturing)
GS fracturing
. **cracking (fracturing)**
. . stress corrosion cracking
RT brittle materials
brittleness
crack arrest
crack closure
crack opening displacement
crack propagation
cracks
destruction
edge cracks
failure
fatigue (materials)
J integral
rupturing
stress concentration
stress corrosion
stress intensity factors
structural failure
structural strain
temperature inversions

cracks
UF *crevices*
GS fractures (materials)
. **cracks**
. . crack tips
. . **edge cracks**
. . microcracks
. . short cracks
. . surface cracks
RT cavities
crack closure
crack geometry
crack initiation
crack opening displacement
crack propagation
cracking (fracturing)
defects
Elber equation
failure modes
fatigue (materials)
interstices
leakage
openings
stresses
temperature inversions
ultrasonic spectroscopy

CRAF mission
USE **Comet Rendezvous Asteroid Flyby Mission**

craft
USE **vehicles**

Cramer–Rao bounds
(added June 1997)
GS analysis (mathematics)
. real variables
. . extremum values
. . . minima
. . . . **Cramer–Rao bounds**
RT maximum likelihood estimates
variance (statistics)

crampe
RT epilepsy
muscular function
seizures

cranes
SN (EXCLUDES BIRDS)
GS handling equipment
. **cranes**
. . gantry cranes
RT booms (equipment)
conveyors
∞ lifts
logistics
materials handling
towers
winches

cranium
GS anatomy
. head (anatomy)
. . skull
. . . **cranium**
. . . . intracranial cavity
. musculoskeletal system
. . bones
. . . skull
. . . . **cranium**
. . . . . intracranial cavity
RT intercranial circulation
mastoids

Crank–Nicholson method
DEF A method for solving parabolic partial differential equations, whose main feature is an implicit method which avoids the need for using very small time steps.
RT boundary value problems
differential equations
finite difference theory
finite element method
numerical analysis
problem solving

cranked wings
USE **swept wings**

cranks
USE **eccentrics**

crash injuries
GS injuries
. **crash injuries**
RT accidents
burns (injuries)
hazards
whiplash injuries

crash landing
GS crashes
. **crash landing**
. . ditching (landing)
landing
. aircraft landing
. . **crash landing**
. . . ditching (landing)
RT aircraft accidents
aircraft hazards
aircraft safety
aircraft spin
arresting gear
crashworthiness
flight hazards
glide landings
hard landing
horizontal spacecraft landing
lunar landing
pilot error
planetary landing
skid landings
soft landing
spacecraft landing
water landing

crashes
GS **crashes**
. crash landing
. . ditching (landing)
RT accidents
air bag restraint devices
aircraft accidents
aircraft hazards
aircraft safety
collisions
crashworthiness
encounters
flight hazards
flight safety
highways
midair collisions
pilot error
safety
wreckage

crashworthiness
DEF The ability of a vehicle to withstand a crash.
RT aircraft accidents
aircraft landing
aircraft safety

crash landing
crashes
flight safety
impact resistance

cratering
GS **cratering**
. projectile cratering
RT craters
ejecta
impact damage
Mars craters
meteorite craters
meteoritic damage
nuclear explosions

craters
UF *maars*
meteor craters
GS **craters**
. lunar craters
. . Ptolemaeus Crater
. . Tycho crater
. meteorite craters
. planetary craters
. . Mars craters
RT asteroid collisions
calderas
cometary collisions
cones (volcanoes)
cratering
ejecta
impact damage
satellite surfaces

cratons
RT continents
Earth crust
Earth surface
ocean bottom

crawler tractors
GS surface vehicles
. motor vehicles
. . tractors
. . . **crawler tractors**
RT electric motor vehicles
ground support equipment
handling equipment
lunar surface vehicles
manned lunar surface vehicles
tracked vehicles
∞ transport vehicles
∞ vehicles

Cray computers
DEF Supercomputers built by Cray Research Inc. that require the supporting services of another front-end general purpose computer for operation. They incorporate very fast scalar and vector hardware, are used primarily for the simulation of physical phenomena, and are programmed in FORTRAN.
GS data processing equipment
. computers
. . supercomputers
. . . **Cray computers**

crayons
RT ∞ markers
temperature measurement

crazing
USE **surface cracks**

creatine
GS crystals
. **creatine**
RT juices

creatinine
RT diseases
urine

creation
USE **creativity**

creativity
UF *creation*
RT arts
education
morale

creep analysis
RT ∞ analyzing
stress analysis
stress relaxation
structural analysis

creep buckling
GS buckling
. **creep buckling**

creep diagrams
GS diagrams
. **creep diagrams**
RT stress relaxation
stress–strain–time relations

creep properties
GS mechanical properties
. **creep properties**
. . creep rupture strength
. . shear creep
. . steady state creep
. . tensile creep
RT anelasticity
deformation
dimensional stability
ductility
fatigue (materials)
∞ flow
plastic deformation
plastic flow
∞ properties
residual stress
shear flow
shear properties
static deformation
stress relaxation
stresses
structural failure
superplasticity
temperature inversions

creep resistance
USE **creep strength**

creep rupture strength
UF *stress rupture strength*
GS mechanical properties
. creep properties
. . **creep rupture strength**
RT fracture strength
J integral
∞ strength

creep strength
DEF The constant nominal stress that will cause a specified quantity of creep in a given time at constant temperature. Used for creep resistance.
UF *creep resistance*
GS mechanical properties
. **creep strength**
RT load carrying capacity
∞ resistance
∞ strength

creep tests
RT compression tests
fatigue tests
load tests
plastic deformation
static tests
∞ tests

crepe
GS fabrics
. **crepe**
RT cotton fibers
silk

cresols
GS hydroxyl compounds
. alcohols
. . phenols
. . . **cresols**

crestatrons
USE **traveling wave tubes**

crests
USE **waves**

Cretaceous Period
(added June 1989)
GS Mesozoic Era
. **Cretaceous Period**
RT Cretaceous–Tertiary boundary
geochronology
paleontology
Tertiary Period

Cretaceous–Tertiary boundary
(added June 1989)
UF *K–T boundary*
RT Cenozoic Era
cometary collisions
Cretaceous Period
extinction
geochronology
Mesozoic Era
paleobiology
paleontology
Tertiary Period

crevasses
GS **crevasses**
. glaciers
RT Earth movements
geological faults
recesses
seamounts

crevices
USE **cracks**

crew experiment stations
GS stations
. workstations
. . crew workstations
. . . **crew experiment stations**
RT astronauts
compartments
cosmonauts
crews
personnel
spacecraft cabins
spacecrews

crew observation stations
GS stations
. workstations
. . crew workstations
. . . **crew observation stations**
RT astronauts
compartments

cosmonauts
crews
personnel
spacecraft cabins
spacecrews

crew procedures (inflight)
DEF Operations performed by crews aboard aircraft or spacecraft during flight. Includes flight operations as well as spaceborne experiment procedures.
GS flight operations
. **crew procedures (inflight)**
procedures
. **crew procedures (inflight)**
RT display devices
flight crews
in-flight monitoring
spacecrews
tasks
∞ tests

crew procedures (preflight)
DEF Operations performed by crews aboard aircraft or spacecraft and by ground support crews before flight or launching.
GS procedures
. **crew procedures (preflight)**
RT countdown
display devices
flight crews
flight operations
ground handling
ground tests
in-flight monitoring
onboard equipment
preflight operations
prelaunch tests
spacecraft control
spacecrews
tasks
∞ tests

crew size
DEF The number of people in a crew.
RT flight crews

crew stations
USE **crew workstations**

crew workstations
UF *crew stations*
GS stations
. workstations
. . **crew workstations**
. . . crew experiment stations
. . . crew observation stations
RT astronauts
compartments
cosmonauts
crews
helmet mounted displays
personnel
spacecraft cabins
spacecrews

crews
GS personnel
crews
. . **flight crews**
. . . **spacecrews**
RT astronauts
cosmonauts
crew experiment stations
crew observation stations
crew workstations
flight nurses
pilots (personnel)

crickets
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **crickets**

crime
RT air piracy
law (jurisprudence)
police
regulations
security
social factors
surveillance
violence

crimping
USE **folding**

criteria
DEF The minimum **standards** or limits on which judgments may be based.
GS **criteria**
. structural design criteria
RT evaluation
figure of merit
∞ measures
standards

critical experiments
RT experimentation
nuclear fission
nuclear reactions

critical flicker fusion
UF *flicker fusion frequency*
GS perception
. sensory perception
. . visual perception
. . . **critical flicker fusion**
RT afterimages
flicker

critical flow
GS fluid flow
. **critical flow**
RT flow characteristics
gas flow
laminar flow
liquid flow
multiphase flow
orifice flow
pipe flow
pressure gradients
single-phase flow
steady flow
steam flow
subcritical flow
supercritical flow
turbulent flow
unsteady flow

critical frequencies
DEF The limiting frequencies below which magnetoionic wave components are reflected and above which they penetrate through, an ionized medium (plasma) at vertical incidence.
GS frequencies
. **critical frequencies**
RT light (visible radiation)
resonant frequencies

critical loading
SN (LIMITED TO FORCE LOADS)
UF *critical stress*
GS loads (forces)
. **critical loading**
stresses
. **critical loading**
RT aerodynamic loads
crack initiation
dynamic loads
load carrying capacity
proportional limit
shallow shells
static loads

critical Mach number
USE **critical velocity**
Mach number

critical mass
DEF The amount of concentrated fissionable material that can just support a self-sustaining fission reaction.
GS mass
. **critical mass**
RT nuclear fission
nuclear fuel burnup
nuclear reactions
plasma core reactors
subcritical mass

critical path method
GS network analysis
. **critical path method**
RT ∞ control
dynamic programming
estimating
GERT
management methods
∞ methodology
mission planning
operations research
∞ paths
PERT
planning
program trend line analysis
programming (scheduling)
project management
research
sequencing
sneak circuit analysis
systems engineering

critical point
DEF The thermodynamic state in which liquid and gas phases of a substance coexist in equilibrium at the highest possible temperature. At higher temperature than the critical no liquid phase can exist.
GS thermodynamic properties
. thermophysical properties
. . **critical point**
RT Mayer problem

critical pressure
DEF In rocketry, the pressure in the nozzle throat for which the isentropic weight flow rate is maximum. The pressure of a gas at the critical point, which is the highest pressure under which a liquid can exist in equilibrium with its vapor.
GS pressure
. **critical pressure**
thermodynamic properties
. thermophysical properties
. . **critical pressure**
RT degenerate matter
high pressure
liquid phases
supercritical pressures
vapor phases

critical Reynolds number
USE **Reynolds number**

critical speed
USE **critical velocity**

critical stress
USE **critical loading**

critical temperature
DEF The temperature above which a substance cannot exist in the liquid state regardless of the pressure. As applied to reactor overheat or afterheat, the temperature at which the least resistant component of the reactor core begins to melt down. As applied to materials, the temperature at which a change in phase takes place causing an appreciable change in the properties of the material.
GS temperature
. **critical temperature**
thermodynamic properties
. thermophysical properties
. . **critical temperature**
RT cryogenic temperature
heat treatment
high temperature superconductors
metallic hydrogen
noncondensable gases
phase diagrams
phase transformations

critical velocity
DEF In rocketry, the speed of sound at the conditions prevailing at the nozzle throat. Used for critical Mach number, critical Reynolds number, and critical speed.
UF *critical Mach number*
critical speed
GS rates (per time)
. **critical velocity**
velocity
. **critical velocity**
RT exhaust velocity
resonant frequencies
Reynolds number
tip speed

Croatia
(added October 1994)
GS nations
. **Croatia**
RT Bosnia and Herzegovina
Europe
Yugoslavia

Crocco method
RT axisymmetric flow
boundary layers
compressible flow
compressible fluids
entropy
inviscid flow
∞ methodology
shock wave propagation
steady flow
vorticity

Crocco–Lee theory
RT boundary layer separation
continuity equation
gas flow
inviscid flow
mass flow
multiphase flow
reattached flow
separated flow
∞ theories

Croloy
GS alloys
. iron alloys
. . **steels**
. . . **Croloy**

crop calendars
DEF Schedules for the maturation and harvesting of seasonal crops.
GS calendars
. **crop calendars**
RT ∞ crops
farm crops
growth
scheduling
seasons

crop dusting
DEF The application of fungicides or insecticides in powder form to a crop, usually from a low flying aircraft.
GS spraying
. **crop dusting**
RT aerosols
agricultural aircraft
agriculture
dispersions
farm crops
pesticides
powder (particles)

crop growth
GS growth
. vegetation growth
. . **crop growth**
RT agriculture
alfalfa
barley
blight
citrus trees
corn
∞ crops
Earth resources
farm crops
farmlands
germination
grasslands
Large Area Crop Inventory Experiment
oats
orchards
photosynthesis
plant diseases
plant stress
plants (botany)
sugar beets
sugar cane
thermal resources
vineyards
wheat

crop identification
GS identifying
. **crop identification**
RT agriculture
∞ crops
Earth resources
evaluation
farmlands
ground truth
imaging techniques
leaf area index
multispectral photography
plant diseases
recognition
remote sensors
∞ sensors
sorghum
spectral signatures
SPOT (French satellite)
sunflowers
timber identification
vegetative index

crop inventories
DEF Numerical estimates of vegetable, fruit, and other commercial farm products based on the analysis of photography or imagery from aircraft or satellites made during periodic passes during the growth cycle.
GS inventories
. **crop inventories**
RT agriculture
AgRISTARS project
farm crops
farmlands
Large Area Crop Inventory Experiment
leaf area index
remote sensors
vegetative index

Crop Inventories by Remote Sensing
USE **AgRISTARS project**

crop vigor
RT agriculture
alfalfa
barley
blight
citrus trees
farm crops
farmlands
irrigation
oats
orchards
phototropism
plant diseases
plant stress
plants (botany)
sugar beets
sugar cane
thermal resources
vegetation growth
viability
vineyards
wheat

croplands
USE **farmlands**

∞ **crops**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT agriculture
alfalfa
barley
biomass energy production
citrus trees
corn
crop calendars
crop growth
crop identification
farm crops
farmlands
frost damage
Large Area Crop Inventory Experiment
orchards
planting
sorghum
sunflowers
tomatoes
vineyards
wheat

cross correlation
GS correlation

. **cross correlation**
RT autocorrelation
data correlation

cross coupling
GS coupling
. **cross coupling**
RT communication theory
couples
coupling circuits
microwave coupling
optical coupling
radio frequency interference

cross faults
USE **geological faults**

cross flow
DEF A flow going across another flow, as a spanwise flow over a wing.
GS fluid flow
. **cross flow**
RT aerodynamic characteristics
∞ flow
flow characteristics
flow geometry
spanwise blowing
water tunnel tests

cross polarization
DEF The component of the electric field vector normal to the desired polarization component.
GS polarization (waves)
. **cross polarization**
RT optical coupling
optical properties
polarized electromagnetic radiation
polarons
rotation

cross relaxation
RT masers
∞ relaxation
rutile
spin–spin coupling

∞ **cross sections**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Measures of the effectiveness of particular processes expressed either as areas (geometric cross sections) which would produce the observed results, or as ratios.
RT absorption cross sections
airfoil profiles
area
atomic collisions
collision parameters
distribution (property)
drawings
geometry
gradients
ionization cross sections
mean free path
neutron cross sections
planforms
radar cross sections
scattering cross sections
shapes
stopping power
surveys
two dimensional bodies

crossbedding (geology)
GS geology
. **crossbedding (geology)**
RT landforms
rocks
strata
stratification
stratigraphy

crossed field amplifiers
GS amplifiers
. microwave amplifiers
. . **crossed field amplifiers**
microwave equipment
. microwave amplifiers
. . **crossed field amplifiers**
RT electron tubes
magnetrons
traveling wave tubes

crossed field guns
RT electron guns
∞ guns
plasma control
plasma guns
plasma jets

crossed fields
RT electric fields
field theory (physics)
magnetic fields
magnetrons
plasma control
waveguides

crossings
GS **crossings**
. chiasms
RT bridges (structures)
crossovers
intersections
pipelines
ramps (structures)

crosslinking
GS **crosslinking**
. vulcanizing
RT addition resins
coupled modes
curing
∞ joining
netting (materials/structures)
phenolic epoxy resins

crossovers
RT bridges (structures)
crossings
intersections

crosstalk
DEF Electrical disturbances in a communication channel as a result of coupling with other communication channels.
GS electromagnetic interference
. **crosstalk**
. . ionospheric cross modulation
RT communicating
electromagnetic compatibility
∞ interference
telephony
wave diffraction

crowding
RT∞ concentration
∞ saturation

CRRES (satellite)
(added April 1993)
UF *Combined Release and Radiation Effects Sat*
GS artificial satellites
. scientific satellites
. . **CRRES (satellite)**
RT chemical clouds
chemical release modules
Earth ionosphere
Earth magnetosphere
extraterrestrial radiation
orbital space tests
radiation effects
space plasmas
spaceborne experiments

crucibles
RT∞ containers
heating equipment

cruciform wings
GS airfoils
. wings
. . **cruciform wings**
RT fixed wings
low aspect ratio wings

crude oil
UF *petroleum*
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . fossil fuels
. . . . **crude oil**
geophysical fluids
. **crude oil**
oils
. **crude oil**
resources
. Earth resources
. . fossil fuels
. . . **crude oil**
RT carbonaceous materials
deposits
energy policy
fuel production
offshore energy sources
oil exploration
oil fields
petroleum products
reserves
underwater resources
waxes

cruise missiles
DEF Guided missiles, the major portion of whose flight path to its target is conducted a approximately constant velocity – depends on the dynamic reaction of air for lift, and upon propulsive forces to balance drag.
GS missiles
. surface to surface missiles
. . **cruise missiles**
. . . Navaho missile
. . . Tomahawk missiles
RT antiship missiles
terrain following

cruising flight
RT coasting flight
∞ flight
horizontal flight

Crusader aircraft
USE **F–8 aircraft**

crushers
RT comminution
crushing
disintegration
grinding mills
impactors

crushing
GS comminution
. **crushing**
RT crushers
disintegration
grinding (comminution)

crustal dynamics
USE **Earth crust**
geodynamics

crustal fractures
GS fracturing
. **crustal fractures**
RT Earth crust
Earth movements
Earth surface
earthquake resistance
earthquakes
geodynamics
geological faults
microseisms
P waves
S waves
San Andreas Fault
seismic waves
seismology
shatter cones
shock loads
shock waves
soil mechanics
surface waves

crusts
GS **crusts**
. lunar crust
. planetary crusts
. . Earth crust
RT lunar mantle
planetary mantles

cryochemistry
DEF The study of chemical phenomena in very low temperature environment.
GS physical chemistry
. **cryochemistry**
RT ∞ chemistry
cryogenic equipment
cryogenics
low temperature physics

cryocycle principle
RT cryopumping
spacecraft power supplies

cryodeposits
GS deposits
. **cryodeposits**
RT coatings
∞ cryogenic storage
cryogenics

cryogenic computer storage
GS computer components
. computer storage devices
. . **cryogenic computer storage**
RT ∞ cryogenic storage
cryotrons
∞ equipment
superconductors (materials)

cryogenic cooling
DEF Use of cryogenic fluids to reach temperatures near absolute zero.
GS cooling
. supercooling
. . **cryogenic cooling**
RT coolers
cryogenics
freezing
heat transfer
refrigerating

cryogenic equipment
UF *Dewar systems*
RT cryochemistry
cryogenics
∞ equipment
gravitational wave antennas
refrigerating
refrigerating machinery
solid cryogens

cryogenic fluid storage
RT cold surfaces
∞ cryogenic storage
evaporative cooling
fluid management
fuel tanks
multilayer insulation
space storage
∞ storage
storage tanks
thermal insulation

cryogenic fluids
GS liquids
. **cryogenic fluids**
. . Fermi liquids
. . FLOX
. . liquid helium
. . . liquid helium 2
. . liquid hydrogen
. . liquid nitrogen
. . liquid oxygen
RT cryogenic temperature
cryogenics
cryopumping
fluid management
∞ fluids
rocket oxidizers
solid cryogen cooling
solidified gases

cryogenic gyroscopes
GS gyroscopes
. **cryogenic gyroscopes**
RT high temperature superconductors

cryogenic magnets
GS magnets
. **cryogenic magnets**
RT high temperature superconductors
superconducting magnets

cryogenic rocket propellants
DEF Rocket fuels, oxidizers, or propulsion fluids which are liquid only at very low temperatures.
GS propellants
. rocket propellants
. . liquid rocket propellants
. . . **cryogenic rocket propellants**
RT cryogenics
endothermic fuels
fluid management
gaseous rocket propellants
gelled rocket propellants
high energy fuels
high energy propellants
hybrid propellants
hydrogen fuels
hypergolic rocket propellants
liquefied gases
liquid hydrogen
liquid oxygen
RL-10 engines
slush
space storage
storable propellants

∞ **cryogenic storage**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cryodeposits
cryogenic computer storage
cryogenic fluid storage

cryogenic temperature
UF *ultralow temperature*
GS temperature
. low temperature
. . **cryogenic temperature**
RT absolute zero
cold traps
critical temperature
cryogenic fluids
cryogenics
Curie temperature
solidified gases
space temperature

cryogenic wind tunnels
DEF Wind tunnels employing a cryogenic environment and utilizing independent control over Mach number, Reynolds number, aeroelastic effects, and model-tunnel interactions.
GS test facilities
. wind tunnels
. . **cryogenic wind tunnels**
RT flight simulators
test chambers

cryogenics
DEF The study of the methods of producing very low temperatures. The study of the behavior of materials and processes at cryogenic temperatures.
RT absolute zero
cold traps
cooling
cryochemistry
cryodeposits
cryogenic cooling
cryogenic equipment
cryogenic fluids
cryogenic rocket propellants
cryogenic temperature
cryopumping
cryosar
cryostats
cryotrons
Fermi liquids
high temperature superconductors
Joule-Thomson effect
liquefied gases
low temperature
low temperature physics
refrigerating
solid cryogen cooling
solid cryogens
solid nitrogen
solidified gases
superconducting power transmission
superconductivity
thermoelectric cooling
thermomagnetic cooling

cryolite
GS aluminum compounds
. **cryolite**
halogen compounds
. fluorine compounds
. . fluorides

. . . **cryolite**
. . fluoro compounds
. . . **cryolite**
. **halides**
. . **fluorides**
. . . **cryolite**
minerals
. **cryolite**
sodium compounds
. **cryolite**
RT aluminum

cryopumping
DEF The process of removing gas from a system by condensing it on a surface maintained at very low temperatures.
RT cryocycle principle
cryogenic fluids
cryogenics
∞ pumping
vacuum pumps

cryosar
GS electronic equipment
. **diodes**
. . **semiconductor diodes**
. . . **avalanche diodes**
. . . . **cryosar**
. **solid state devices**
. . **semiconductor devices**
. . . **avalanche diodes**
. . . . **cryosar**
rectifiers
. **avalanche diodes**
. . **cryosar**
RT Barritt diodes
computer storage devices
cryogenics

cryosorption
USE **sorption**

∞ **cryospheres**
(added June 1996)
SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED - - CONSULT THE TERMS LISTED BELOW))
RT Earth cryosphere
planetary cryospheres
planetary environments

cryostats
GS control equipment
. **regulators**
. . **cryostats**
RT controllers
cryogenics
electric switches
high temperature tests
liquid helium
liquid helium 2
low temperature tests
temperature control
thermostats

cryotrapping
GS trapping
. **cryotrapping**
RT cold traps

cryotrons
DEF Devices based upon the principle that superconductivity established at temperatures near absolute zero is destroyed by the application of a magnetic field.
GS electronic equipment
. solid state devices
. . **cryotrons**
switches
. electric switches
. . **cryotrons**
RT cryogenic computer storage
cryogenics
superconductivity
superconductors (materials)

cryptography
DEF The science of preparing messages in a form which cannot be read by those not privy to the secrets of the form.
RT ∞ codes
coding
computer information security
decoding
information theory
message processing

crystal defects
DEF Departure from the regular arrangment of atoms in the ideal crystal lattice.
UF *lattice imperfections*
stacking faults
GS defects
. **crystal defects**
. . crystal dislocations
. . . **edge dislocations**
. . . **screw dislocations**
. . **point defects**
. . . **vacancies (crystal defects)**
. . . . **Frenkel defects**
. . **antisite defects**
RT crystallography
holes (electron deficiencies)
impurities
interstitials
lattice vibrations
mechanical twinning
order–disorder transformations
pinning
polygonization
stacking fault energy
stacks
surface defects
trapping
twinning

crystal dislocations
DEF Types of lattice imperfections whose existence in metals is postulated in order to account for the phenomenon of crystal growth and of slip, particularly for the low value of shear stress required to initiate slip.
GS defects
. crystal defects
. . **crystal dislocations**
. . . **edge dislocations**
. . . **screw dislocations**
dislocations (materials)
. **crystal dislocations**
. . **edge dislocations**
. . **screw dislocations**
RT fatigue (materials)
grain boundaries
pinning
point defects
Portevin–le Chatelier effect
superlattices
superplasticity
surface defects

crystal field splitting
USE **crystal field theory**

crystal field theory
(added January 1993)
UF *crystal field splitting*
crystal fields
GS field theory (physics)
. **crystal field theory**
RT crystal lattices
electric fields
metal ions

crystal fields
USE **crystal field theory**

crystal filters
GS electromagnetic wave filters
. bandpass filters
. . **crystal filters**
. electric filters
. . **crystal filters**
RT bandstop filters
∞ filters
intermediate frequency amplifiers
radio equipment
radio filters
tunable filters

crystal growth
GS growth
. **crystal growth**
. . Czochralski method
. . directional solidification (crystals)
. . epitaxy
. . . atomic layer epitaxy
. . . electroepitaxy
. . . liquid phase epitaxy
. . . molecular beam epitaxy
. . . vapor phase epitaxy
. . hydrothermal crystal growth
. . protein crystal growth
. . traveling solvent method
. . Verneuil process
RT Aitken nuclei
Bravais crystals
Bridgman method
containerless melts
crystallization
crystallography
crystals
doped crystals
float zones
inoculation
laser deposition
mechanical twinning
melts (crystal growth)
metalorganic chemical vapor deposition
∞ microgravity applications
netting (materials/structures)
nucleation
polygonization
pulsed laser deposition
rapid quenching (metallurgy)
space processing
twinning
vapor deposition

crystal lattices
DEF Three-dimensional, recurring patterns in which the atoms of crystals are arranged.
GS **crystal lattices**
. close packed lattices
. cubic lattices
. . body centered cubic lattices
. . face centered cubic lattices
. **superlattices**
RT atomic structure
Bravais crystals
Brillouin zones
chemical bonds
crystal field theory
crystallography

crystals
epitaxy
geometry
graphoepitaxy
hexagonal cells
ionic crystals
Ising model
isomorphism
Kossel pattern
lattice parameters
lattice vibrations
∞ lattices
Laue method
metal crystals
metallography
molecular chains
molecular structure
Mossbauer effect
order–disorder transformations
particle in cell technique
Patterson map
polymorphism
rapid quenching (metallurgy)
single crystals
synthetic metals
ultrapure metals

crystal optics
RT aberration
acousto–optics
Bragg cells
diffraction
doped crystals
fiber optics
geometrical optics
∞ optics
phase matching
photorefractivity
physical optics

crystal oscillators
GS crystals
. **crystal oscillators**
. . piezoelectric crystals
oscillators
. **crystal oscillators**
. . piezoelectric crystals
RT electrical properties
frequency control
frequency stability
oscillations
piezoelectricity

crystal rectifiers
UF *silicon rectifiers*
GS electronic equipment
. diodes
. . **crystal rectifiers**
. solid state devices
. . **crystal rectifiers**
rectifiers
. **crystal rectifiers**
RT current converters (AC to DC)
semiconductor devices

crystal structure
SN (AGGLOMERATIONS OF CRYSTALS—EXCLUDES CRYSTAL LATTICES)
GS **crystal structure**
. Widmanstatten structure
RT Abrikosov theory
allotropy
anisotropy
Bravais crystals
clathrates
crystallinity
crystallites
crystals
doped crystals
epitaxy
graphoepitaxy
interstitials
isomorphism
isotropy
liquid phase epitaxy
mechanical twinning
metal crystals
microstructure
molecular dynamics
nanocrystals
nanostructure (characteristics)
order–disorder transformations
packing density
Patterson map
phonons
polycrystals
polymorphism
rapid quenching (metallurgy)
spherulites
∞ structures
superlattices
twinning
vapor phase epitaxy

crystal surfaces
GS solid surfaces
. **crystal surfaces**
RT atomic force microscopy
metal surfaces
surface layers
∞ surfaces

crystallinity
RT amorphous materials
crystal structure

crystallites
GS crystals
. **crystallites**
. . spherulites
RT crystal structure
microcrystals
minerals
rosette shapes

crystallization
UF *devitrification*
GS **crystallization**
. directional solidification (crystals)
. melt spinning
. recrystallization
RT agglomeration
concentrating
containerless melts
crystal growth
demineralizing
freezing
inoculation
liquidus
materials recovery
melts (crystal growth)
modulation
nucleation
Ostwald ripening
phase stability (materials)
phase transformations
precipitation (chemistry)
purification
refining
∞ separation
settling
solid state
solidification
sublimation
supercooling
supersaturation
zone melting

crystallography
RT Bragg angle
crystal defects
crystal growth
crystal lattices
crystals
Debye–Scherrer method
directivity
isotropy
lamella (metallurgy)
lattice parameters
Laue method
metallography
∞ metallurgy
microbeams
microstructure
mineralogy
neutron diffraction
order–disorder transformations
∞ orientation
radiography
∞ solid state physics
x ray analysis
x ray diffraction

crystals
GS **crystals**
. bicrystals
. boules
. Bravais crystals
. creatine
. crystal oscillators
. . piezoelectric crystals
. crystallites
. . spherulites
. dendritic crystals
. doped crystals
. ionic crystals
. liquid crystals
. metal crystals
. microcrystals
. mixed crystals
. nanocrystals
. polycrystals
. quartz crystals
. single crystals
. whiskers (crystals)
RT anisotropy
body centered cubic lattices
clathrates
containerless melts
crystal growth
crystal lattices
crystal structure
crystallography
electroepitaxy
face centered cubic lattices
∞ grains
isotropy
packing density
phase matching
ruby
spherules

CSM
USE **command service modules**

CT–114 aircraft
USE **CL–41 aircraft**

CTD
USE **charge transfer devices**

Cuba
GS landforms

. islands
. . West Indies
. . . **Cuba**
nations
. **Cuba**
RT Caribbean region
Caribbean Sea

cubane
GS organic compounds
. hydrocarbons
. . **cubane**

cubes (mathematics)
GS geometry
. Euclidean geometry
. . polyhedrons
. . . **cubes (mathematics)**
RT blocks

cubic equations
GS **algebra**
. nonlinear equations
. . **cubic equations**
analysis (mathematics)
. real variables
. . nonlinear equations
. . . **cubic equations**
field theory (algebra)
. **cubic equations**
RT ∞ equations
polynomials

cubic lattices
GS crystal lattices
. **cubic lattices**
. . body centered cubic lattices
. . face centered cubic lattices

cues
RT auditory signals
visual signals

cuestas
USE **ridges**

cuffs
RT clothing
seals (stoppers)

cultivation
GS **cultivation**
. plowing
RT ammonia
ammonium nitrates
ashes
culture techniques
fertilizers
planting
silviculture
soils
tissues (biology)

cultural resources
DEF Archaeological and historical sites.
RT archaeology
human beings

culture (social sciences)
RT American Indians
anthropology
artifacts
Eskimos
ethnic factors
governments
minorities
politics
race factors
races (anthropology)
regimes
social factors
sociology

culture techniques
RT Chlorella
cloning (biology)
cultivation
microbiology

cumulative damage
GS damage
. **cumulative damage**
RT component reliability
defects
degradation
durability
failure
operational hazards
reliability
structural reliability
wear tests

cumulonimbus clouds
DEF A cumuliform cloud type: heavy and dense, with considerable vertical extent in the form of massive towers. This form frequently exhibits tops in the shape of an anvil or massive plume. It is frequently accompanied by lightning, thunder, and sometimes hail; occasionally producing a tornado or a watersprout.
GS clouds (meteorology)
. convection clouds
. . **cumulonimbus clouds**
. . . anvil clouds
RT cumulus clouds
nimbostratus clouds
precipitation (meteorology)
thunderstorms
tornadoes

cumulus clouds
DEF Clouds in the form of individual detached domes or towers which are usually dense and well defined. These clouds develop vertically in the form of rising mounds. The sunlit parts are mostly brilliantly white; their bases are relatively dark and nearly horizontal.
GS clouds (meteorology)
. convection clouds
. . **cumulus clouds**
. . . anvil clouds
RT cumulonimbus clouds
stratocumulus clouds

∞ **cupolas**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT domes (structural forms)
furnaces
gun turrets

curare
GS poisons
. **curare**
RT alkaloids
anticholinergics
∞ poisoning
toxicology

cures
RT diseases
drugs
first aid
healing
therapy

Curie temperature
DEF The temperature in a ferromagnetic material above which the material becomes substantially nonmagnetic.
GS magnetic properties
. **Curie temperature**
temperature
. **Curie temperature**
RT cryogenic temperature
diamagnetism
electrets
ferroelectricity
ferromagnetism

Curie-Weiss law
RT ferromagnetism
magnetic permeability
magnetic properties
paramagnetism

curing
RT alfalfa
autoclaving
citrus trees
corn
crosslinking
degradation
drying
farm crops
glass transition temperature
oats
orchards
preserving
resin transfer molding
∞ setting
vulcanizing
weathering

curium
GS chemical elements
. actinide series
. . transuranium elements
. . . **curium**
. . . . curium isotopes
. . . . . curium 242
. . . . . curium 244
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . **curium**
. . . . . curium isotopes
. . . . . curium 242
. . . . . curium 244
metals
. actinide series
. . transuranium elements
. . . **curium**
. . . . curium isotopes
. . . . . curium 242
. . . . . curium 244

curium 242
GS chemical elements
. actinide series
. . transuranium elements
. . . curium
. . . . curium isotopes
. . . . . **curium 242**
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . curium
. . . . . curium isotopes
. . . . . **curium 242**
metals

. actinide series
. . transuranium elements
. . . curium
. . . . curium isotopes
. . . . . **curium 242**

curium 244
GS chemical elements
. actinide series
. . transuranium elements
. . . curium
. . . . curium isotopes
. . . . . **curium 244**
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . curium
. . . . . curium isotopes
. . . . . **curium 244**
metals
. actinide series
. . transuranium elements
. . . curium
. . . . curium isotopes
. . . . . **curium 244**

curium compounds
GS actinide series compounds
. **curium compounds**
RT ∞ chemical compounds
Group 3B compounds

curium isotopes
GS chemical elements
. actinide series
. . transuranium elements
. . . curium
. . . . **curium isotopes**
. . . . . curium 242
. . . . . curium 244
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . curium
. . . . . **curium isotopes**
. . . . . curium 242
. . . . . curium 244
metals
. actinide series
. . transuranium elements
. . . curium
. . . . **curium isotopes**
. . . . . curium 242
. . . . . curium 244

curl (materials)
RT dimensional stability
folding
∞ materials
textures

curl (vectors)
DEF A vector operation upon a vector field which represents the rotation of the field, related to the circulation of the field at each point.
GS analysis (mathematics)
. calculus
. . vector analysis
. . . **curl (vectors)**
. . . . vorticity
. real variables
. . vector analysis
. . . **curl (vectors)**
. . . . vorticity
geometry
. vector analysis
. . **curl (vectors)**
. . . vorticity

current algebra
GS algebra
. **current algebra**
RT ∞ mathematics
nuclear physics
vector currents

current amplifiers
GS amplifiers
. **current amplifiers**
. . photomultiplier tubes
. . . frequency modulation photomultipliers
RT transistor amplifiers
voltage amplifiers

current converters (AC to DC)
RT alternating current
∞ converters
crystal rectifiers
direct current
electric current
inverted converters (DC to AC)
rectifiers
silicon controlled rectifiers
thyratrons

current density
GS rates (per time)
. flux density
. . **current density**
RT electric current
electrolysis
electroplating
pinning

current distribution
GS distribution (property)
. **current distribution**
RT charge distribution
electron distribution
∞ hole distribution
hole distribution (electronics)
ion distribution
magnetic annular arc
neutral currents

current regulators
UF *current stabilizers*
GS control equipment
. regulators
. . **current regulators**
RT circuit protection
controllers
electric current
∞ electric equipment
electric switches
electronic control
limiter circuits
power factor controllers
power supply circuits
switching circuits
transmission loss
voltage regulators

current sheets
RT antennas
electric current
magnetic flux
magnetic islands
∞ sheets

current stabilizers
USE **current regulators**

∞ **currents**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT air currents
air flow
beam currents
circulation
coastal currents
electric current
external surface currents
fluid flow
ocean currents
water currents

currents (oceanography)
USE **water currents**

curtains
RT ∞ barriers
dividers
doors
entrances
openings
∞ partitions
partitions (structures)
∞ screens
separators
walls
windows (apertures)

Curtiss C-46 aircraft
USE **C-46 aircraft**

Curtiss-Wright aircraft
GS **Curtiss-Wright aircraft**
. C-46 aircraft
. X-19 aircraft
RT ∞ aircraft

curvature
GS geometry
. **curvature**
RT camber
∞ curves
curves (geometry)
differential geometry
flexing
∞ profiles
shapes
zero force curves

curve fitting
RT data compression
data smoothing
forecasting
least squares method
minimax technique
saddle points
statistical distributions
statistical tests
time series analysis

curved beams
GS structural members
. beams (supports)
. . **curved beams**
RT camber
I beams

curved panels
GS panels
. **curved panels**
RT contours
shapes
wing panels

curved surfaces
USE **contours**
shapes
surfaces

∞ **curves**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT curvature
graphs (charts)
learning curves
light curve
toroids
trajectories
zero force curves

curves (geometry)
GS geometry
. **curves (geometry)**
. . catenaries
. . cycloids
. . epicycloids
. . S curves
. . . Gompertz curves
RT analytic geometry
∞ arcs
chords (geometry)
circles (geometry)
curvature
cusps (mathematics)
differential geometry
Euclidean geometry
geodesic lines
∞ helices
homotopy theory
inflection points
line shape
manifolds (mathematics)
menisci
segments
∞ spirals

curvilinear coordinates
USE **spherical coordinates**

Cushioncraft ground effect machine
GS ground effect machines
. **Cushioncraft ground effect machine**
RT hovering
vertical takeoff aircraft

cushions
RT air cushion landing systems
bumpers
couches
ground effect (aerodynamics)
hydraulic equipment
∞ pad
pneumatic equipment
seats
shock absorbers
vibration isolators

∞ **cusps**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cusps (landforms)
cusps (mathematics)
double cusps
polar cusps

cusps (landforms)
GS landforms
. **cusps (landforms)**
RT beaches
coasts
∞ cusps
topography

cusps (mathematics)
GS geometry
. **cusps (mathematics)**
. . double cusps
RT curves (geometry)
∞ cusps
epicycloids
maxima
minima

custom integrated circuits
USE **application specific integrated circuits**

∞ **cut-off**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF An act or instance of shutting something off; specifically, in rocketry, an act or instance of shutting off the propellant flow in a rocket, or stopping the combustion of the propellant.
RT burnout
engine failure
machining

cut-outs
USE **openings**

cutaneous perception
USE **touch**

cutters
SN (EXCLUDES SHIPS)
GS **cutters**
. blades (cutters)
. . razor blades
. drill bits
. drills
. saws
. shears
RT cutting
dies
laser cutting
machine tools
scrapers
taps
tools

cutting
GS **cutting**
. blanking (cutting)
. laser cutting
. metal cutting
. milling (machining)
. planing
. scarfing
. shearing
. slicing
. spark machining
RT abrasion
chipping
comminution
cutters
drilling
flaking
forming techniques
fracturing
grinding (material removal)
grooving
machining
micromachining
peeling
perforating
piercing
∞ separation
shredding
splitting
torches

CV-2 aircraft
USE **DHC 4 aircraft**

CV-340 aircraft
UF *Convair 340 aircraft*
GS commercial aircraft
. **CV-340 aircraft**
General Dynamics aircraft
. **CV-340 aircraft**
monoplanes
. **CV-340 aircraft**
passenger aircraft
. **CV-340 aircraft**
RT ∞ aircraft

CV-440 aircraft
UF *Convair 440 aircraft*
Metropolitan aircraft
GS commercial aircraft
. **CV-440 aircraft**
General Dynamics aircraft
. **CV-440 aircraft**
monoplanes
. **CV-440 aircraft**
passenger aircraft
. **CV-440 aircraft**
RT ∞ aircraft

CV-7 aircraft
USE **DHC 5 aircraft**

CV-880 aircraft
UF *Convair 880 aircraft*
GS commercial aircraft
. **CV-880 aircraft**
General Dynamics aircraft
. **CV-880 aircraft**
jet aircraft
. **CV-880 aircraft**
monoplanes
. **CV-880 aircraft**
passenger aircraft
. **CV-880 aircraft**
transport aircraft
. **CV-880 aircraft**
RT ∞ aircraft

CV-990 aircraft
UF *Convair 990 aircraft*
GS commercial aircraft
. **CV-990 aircraft**
General Dynamics aircraft
. **CV-990 aircraft**
jet aircraft
. turbofan aircraft
. . **CV-990 aircraft**
monoplanes
. **CV-990 aircraft**
passenger aircraft
. **CV-990 aircraft**
RT ∞ aircraft

CVD (deposition)
USE **vapor deposition**

CVI (fabrication)
USE **chemical vapor infiltration**

CVM (solid state)
USE **cluster variation method**

CW radar
USE **continuous wave radar**

cyanamides
GS nitrogen compounds
. amides
. . **cyanamides**
. cyano compounds
. . **cyanamides**

cyanates
RT esters
urethanes

cyanide emission
USE **CN emission**

cyanides
GS **cyanides**
. acetonitrile
. cyanogen
. iron cyanides
. malononitrile
RT cyano compounds
cyanoacetylene
nitrogen compounds

cyano compounds
GS nitrogen compounds
. **cyano compounds**
. . cyanamides
. . cyanoacetylene
. . isocyanates
. . . diisocyanates
. . . fulminates
RT ∞ chemical compounds
cyanides
nitriles

cyanoacetylene
GS nitrogen compounds
. cyano compounds
. . **cyanoacetylene**
organic compounds
. hydrocarbons
. . **cyanoacetylene**
RT acetylene
cyanides

cyanocobalamin
UF *vitamin B 12*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **cyanocobalamin**
vitamins
. **cyanocobalamin**

cyanogen
GS cyanides
. **cyanogen**

Cyanophyta
USE **blue green algae**

cyanosis
GS diseases
. **cyanosis**
RT blood circulation
heart function

cyanurates
GS **esters**
. **cyanurates**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azines
. . . . **cyanurates**
pyrazines
. azines
. . **cyanurates**

cyanuric acid
GS **acids**
. **cyanuric acid**
hydroxyl compounds
. alcohols
. . triols
. . . **cyanuric acid**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azines
. . . . **cyanuric acid**
pyrazines
. azines
. . **cyanuric acid**

Cyber 74 computer
USE **CDC Cyber 74 computer**

cybernetics
DEF The study of methods of control and communication which are common to living organisms and machines.
RT adaptive control
automata theory
∞ automation
bionics
communication theory
computers
∞ control
control systems design
controllers
depersonalization
feedback
human factors engineering
information theory
machine learning
man machine systems
management
model reference adaptive control
neural nets
psychology
∞ systems
systems engineering

cycles
DEF The complete sequences of values of a periodic quantity that occur during a period. Used for cycling and periodic processes.
UF *cycling*
periodic processes
GS **cycles**
. activity cycles (biology)
. carbon cycle
. hydrological cycle
. solar cycles
. . sunspot cycle
. stress cycles
. thermodynamic cycles
. . Brayton cycle
. . Carnot cycle
. . Otto cycle
. . Rankine cycle
. . Stirling cycle
. work–rest cycle
RT alternations
amplitudes
annual variations
cyclic loads
diurnal variations
fatigue (materials)
frequency distribution
harmonics
intermittency
long term effects
periodic variations
∞ phases
reciprocation
rhythm (biology)
starting
superharmonics

cyclic accelerators
GS particle accelerators
. **cyclic accelerators**
. . betatrons
. . synchrocyclotrons
. . synchrotrons
. . . bevatron
. . . storage rings (particle accelerators)
RT ∞ accelerators

cyclic adenosine monophosphate
USE **cyclic AMP**

cyclic AMP
DEF A nucleotide which is implicated as an intracellular messenger in a wide variety of cellular processes. Prototypically it acts as a molecular transducer of nonsteroid signals from outside the cell to relevant cellular enzymes by a series of reactions. Used for cyclic adenosine monophosphate.
UF *cyclic adenosine monophosphate*
GS organic compounds
. coenzymes
. . **cyclic AMP**
. cyclic compounds
. . heterocyclic compounds
. . . adenosines
. . . . **cyclic AMP**
. nucleotides
. . adenosines
. . . **cyclic AMP**
phosphorus compounds
. phosphates
. . **cyclic AMP**
RT adrenergics
alkynes
amino acids
cholinergics
guanines
pharmacology

cyclic compounds
DEF In organic chemistry, compounds containing a ring of atoms.
GS organic compounds
. **cyclic compounds**
. . cyclic hydrocarbons
. . . anthracene
. . . benzene
. . . chlorobenzenes
. . . colchicine
. . . cyclobutane
. . . cyclohexane
. . . cyclopropane
. . . durene
. . . indene
. . . menthol
. . . naphthalene
. . . naphthenes
. . . polycyclic aromatic hydrocarbons
. . heterocyclic compounds
. . . acriflavine
. . . adenosines
. . . . adenosine diphosphate
. . . . adenosine triphosphate
. . . . cyclic AMP
. . . alkaloids
. . . . atropine
. . . . betaines
. . . . caffeine

. . . . colchicine
. . . . ergotamine
. . . . hyoscine
. . . . lysergine
. . . . morphine
. . . . nicotinamide
. . . . nicotine
. . . . pilocarpine
. . . . reserpine
. . . . strychnine
. . . . tropyl compounds
. . . anisole
. . . ascorbic acid
. . . azines
. . . . cyanurates
. . . . cyanuric acid
. . . . meclizine
. . . . methylene blue
. . . . phenothiazines
. . . azoles
. . . . acetazolamide
. . . . oxazole
. . . . pyrroles
. . . . . carbazoles
. . . . . indoles
. . . . . tryptophan
. . . azulene
. . . bioflavonoids
. . . biotin
. . . carnitine
. . . cyanocobalamin
. . . cytidylic acid
. . . dimenhydrinate
. . . endrin
. . . ethylene oxide
. . . folic acid
. . . furans
. . . . tetrahydrofuran
. . . guanethidine
. . . HMX
. . . nicotinic acid
. . . phthalocyanin
. . . phylloquinone
. . . piperidine
. . . promethazine
. . . purines
. . . . adenines
. . . . xanthines
. . . . . caffeine
. . . . . guanines
. . . . . uric acid
. . . pyridines
. . . pyridoxine
. . . pyrimidines
. . . . alloxan
. . . . thymidine
. . . . thymine
. . . . uracil
. . . RDX
. . . retinene
. . . riboflavin
. . . tetracyclines
. . . tetrazoles
. . . thiamine
. . . thiazine (trademark)
. . . thiophenes
. . . tocopherol
. . . trimethadione
. . rhodamine
RT ∞ chemical compounds
organic chemistry

cyclic hydrocarbons
GS organic compounds
. cyclic compounds
. . **cyclic hydrocarbons**
. . . anthracene
. . . benzene
. . . chlorobenzenes
. . . colchicine
. . . cyclobutane
. . . cyclohexane
. . . cyclopropane
. . . durene
. . . indene
. . . menthol
. . . naphthalene
. . . naphthenes
. . . polycyclic aromatic hydrocarbons
. hydrocarbons
. . **cyclic hydrocarbons**
. . . anthracene
. . . benzene
. . . chlorobenzenes
. . . colchicine
. . . cyclobutane
. . . cyclohexane
. . . cyclopropane
. . . durene
. . . indene
. . . menthol
. . . naphthalene
. . . naphthenes
. . . polycyclic aromatic hydrocarbons
RT alkynes

cyclic loads
SN (LIMITED TO FORCE LOADS)
GS loads (forces)
. dynamic loads
. . **cyclic loads**
RT cycles
Elber equation
inelastic stress
S–N diagrams
stress cycles
structural design criteria
transient loads
variable amplitude loading
vibration
vibratory loads

cycling
USE **cycles**

cyclobutane
GS organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . **cyclobutane**
. hydrocarbons
. . cyclic hydrocarbons
. . . **cyclobutane**

cyclogenesis
RT arc clouds
atmospheric circulation
atmospheric pressure
cyclones
hurricanes
low pressure
storms (meteorology)

cyclohexane
GS organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . **cyclohexane**
. hydrocarbons
. . cyclic hydrocarbons
. . . **cyclohexane**
RT benzene
hexenes
hydrogenation

cycloids
GS geometry
. curves (geometry)
. . **cycloids**
. Euclidean geometry
. . analytic geometry
. . . **cycloids**

cyclones
SN (METEOROLOGICAL—EXCLUDES EQUIPMENT)
DEF Areas of low pressure with a closed circulation that rotate counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.
GS storms
. storms (meteorology)
. . **cyclones**
. . . hurricanes
. . . . Anna hurricane
. . . typhoons
RT anticyclones
atmospheric pressure
baroclinic waves
cyclogenesis
ground wind
low pressure
meteorology
precipitation (meteorology)
storm damage
synoptic meteorology
tornadoes
tropical storms
wind (meteorology)

cyclones (equipment)
USE **centrifuges**

cyclopropane
GS drugs
. anesthetics
. . **cyclopropane**
organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . **cyclopropane**
. hydrocarbons
. . cyclic hydrocarbons
. . . **cyclopropane**
RT propane

Cyclops plasma accelerator
GS plasma accelerators
. **Cyclops plasma accelerator**
RT ∞ accelerators
plasmas (physics)

cyclotetramethylene tetranitramine
USE **HMX**

cyclotrimethylene trinitramine
USE **RDX**

cyclotron frequency
DEF Frequency at which a charged particle orbits in a uniform magnetic field. It depends on the charge to mass ratio of the particle times the magnetic field. While the frequency is independent of the particle energy, Larmor orbit increases with energy.
GS frequencies
. **cyclotron frequency**
RT charged particles
Larmor precession

cyclotron radiation
DEF The electromagnetic radiation emitted by charged particles as they orbit in a magnetic field. The radiation arises from the centripetal

acceleration of the particle as it moves in a circular orbit.
GS electromagnetic radiation
. nonthermal radiation
. . **cyclotron radiation**
. . . ion cyclotron radiation
RT charged particles
Larmor precession
Larmor radius
∞ radiation

cyclotron resonance
DEF Energy transfer to charged particles in a magnetic field from an alternating-current electric field whose frequency is equal to the cyclotron frequency.
GS resonance
. **cyclotron resonance**
. . electron cyclotron resonance
RT charged particles
diamagnetism
energy transfer
Fermi surfaces
ion cyclotron radiation
plasma resonance

cyclotron resonance devices
DEF Microwave amplifiers based on the interaction between electromagnetic waves and transverse electron streams moving along helical trajectories. Used for gyrotrons.
UF *gyrotrons*
GS amplifiers
. microwave amplifiers
. . **cyclotron resonance devices**
electron tubes
. vacuum tubes
. . microwave tubes
. . . **cyclotron resonance devices**
microwave equipment
. microwave amplifiers
. . **cyclotron resonance devices**
. microwave tubes
. . **cyclotron resonance devices**
RT cavity resonators
∞ devices
diffraction radiation
electron cyclotron resonance
klystrons
millimeter waves
power amplifiers
traveling wave tubes

cyclotrons
UF *calutrons*
GS particle accelerators
. **cyclotrons**
. . geocyclotrons
. . microtrons
. . Oak Ridge isochronous cyclotron
. . omegatrons
. . synchrocyclotrons
RT synchrotrons

Cygnus constellation
GS constellations
. **Cygnus constellation**
RT celestial bodies
celestial sphere
stars

∞ **cylinders**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT analytic geometry
circular cylinders
concentric cylinders
cylindrical bodies
cylindrical chambers
cylindrical shells
∞ drums
drums (containers)
elastic cylinders
elliptical cylinders
hemisphere cylinder bodies
monocoque structures
orthotropic cylinders
oscillating cylinders
plasma cylinders
rotating cylinders
viscoelastic cylinders

cylindrical afterbodies
USE **afterbodies**
cylindrical bodies

cylindrical antennas
GS antennas
. **cylindrical antennas**
RT antenna radiation patterns
radio equipment

cylindrical bodies
UF *cylindrical afterbodies*
cylindroids
GS symmetrical bodies
. bodies of revolution
. . **cylindrical bodies**
. . . rotating cylinders
RT afterbodies
Airy function
centerbodies
circular cylinders
∞ cylinders
cylindrical coordinates
elastic cylinders
elliptical cylinders
forebodies
fuselages
hemisphere cylinder bodies
orthotropic cylinders
oscillating cylinders
plasma cylinders
plastic bodies
rollers
viscoelastic cylinders

cylindrical chambers
RT brakes (for arresting motion)
∞ chambers
∞ cylinders

cylindrical coordinates
GS coordinates
. **cylindrical coordinates**
RT astronomical coordinates
Cartesian coordinates
cylindrical bodies

cylindrical plasmas
DEF Magnetic self-attraction of parallel electric currents causing constriction of a conducting plasma through which a large current is flowing.
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **cylindrical plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **cylindrical plasmas**
plasma cylinders
. **cylindrical plasmas**
RT pinch effect

cylindrical shells
GS shells (structural forms)
. **cylindrical shells**
RT circular cylinders
circular shells
circular tubes
concentric cylinders
∞ cylinders
elastic cylinders
elliptical cylinders
metal shells
orthotropic cylinders
orthotropic shells
oscillating cylinders
plasma cylinders
plastic shells
reinforced shells
rotating cylinders
thin walled shells
viscoelastic cylinders

cylindrical tanks
GS tanks (containers)
. **cylindrical tanks**
RT fuel tanks
propellant tanks
storage tanks

cylindrical waves
DEF Waves in which the wave fronts are coaxial cylinders.
RT axisymmetric flow
elastic waves
electromagnetic radiation
plane waves
spherical waves
∞ waves

cylindroids
USE **cylindrical bodies**

Cyprus
GS landforms
. islands
. . **Cyprus**
nations
. **Cyprus**
RT Greece
Mediterranean Sea

Cyrillid meteoroids
GS celestial bodies
. meteoroid showers
. . **Cyrillid meteoroids**
. meteoroids
. . bolides
. . . **Cyrillid meteoroids**
RT natural satellites
tektites

cysteamine
GS amines
. **cysteamine**
drugs
. antiradiation drugs
. . **cysteamine**
RT amino acids
proteins
radiation protection

cysteine
GS acids
. amino acids
. . **cysteine**
drugs
. **cysteine**

organic compounds
. amino acids
. . **cysteine**
sulfur compounds
. thiols
. . **cysteine**
RT proteins

cystic fibrosis
GS diseases
. fibrosis
. . **cystic fibrosis**
RT tissues (biology)

cysts
GS **cysts**
. mucoceles
RT neoplasms
tissues (biology)
tumors

cytidylic acid
GS acids
. **cytidylic acid**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **cytidylic acid**

cytochromes
GS biopolymers
. proteins
. . enzymes
. . . **cytochromes**
organic compounds
. proteins
. . enzymes
. . . **cytochromes**
pigments
. **cytochromes**
RT cytogenesis
skin (anatomy)

cytogenesis
GS **cytogenesis**
. cell division
. differentiation (biology)
. hematopoiesis
. mitosis
RT ∞ biology
cells (biology)
cytochromes
cytology
cytoplasm
∞ differentiation
genetics
heredity
physiology

cytology
RT biochemistry
biological diversity
∞ biology
cell membranes (biology)
cells (biology)
chromosomes
cytogenesis
cytometry
eukaryotes
lysosomes
mitochondria
mitosis
nuclei (cytology)
organelles
plasmolysis
prokaryotes
sarcoplasmic reticulum

cytometry
(added February 1990)
UF *cytophotometry*
RT cells (biology)
cytology
microscopy

cytophotometry
USE **cytometry**

cytoplasm
RT calmodulin
cells (biology)
chloroplasts
cytogenesis
endoplasmic reticulum
eosinophils
fibroblasts
mitosis
nuclei (cytology)
organelles
sarcoplasmic reticulum

Czech Republic
(added December 1995)
GS nations
. **Czech Republic**
RT Czechoslovakia
Europe
Slovakia

Czechoslovakia
GS nations
. **Czechoslovakia**
RT Central Europe
Czech Republic
Czechoslovakian space program
Czechoslovakian spacecraft
Europe
Slovakia

Czechoslovakian space program
(added March 1989)
GS programs
. space programs
. . European space programs
. . . **Czechoslovakian space program**
RT Czechoslovakia

Czechoslovakian spacecraft
DEF Spacecraft of Czechoslovakia.
RT Czechoslovakia
∞ spacecraft

Czochralski method
GS growth
. crystal growth
. . **Czochralski method**
RT ∞ methodology
Verneuil process

D

D layer
USE **D region**

D lines
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . line spectra
. . . . **D lines**
RT absorption spectra
emission spectra
H lines
solar spectra

D region
SN (ALTITUDE RANGE BETWEEN APPROXIMATELY 50 AND 90 KM)
UF *D layer*
GS Earth atmosphere
. upper atmosphere
. . Earth ionosphere
. . . lower ionosphere
. . . . **D region**
regions
. **D region**
RT Earth–ionosphere waveguide

D–1 satellite
GS artificial satellites
. French satellites
. . **D–1 satellite**

D–2 satellites
UF *D–2B satellite*
Polaire satellite
Tournesole satellite
GS artificial satellites
. French satellites
. . **D–2 satellites**
. meteorological satellites
. . **D–2 satellites**

D–2B satellite
USE **D–2 satellites**

D–558 aircraft
UF *Douglas D–558 aircraft*
Skyrocket aircraft
Skystreak aircraft
GS jet aircraft
. **D–558 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **D–558 aircraft**
monoplanes
. **D–558 aircraft**
research vehicles
. research aircraft
. . **D–558 aircraft**
supersonic aircraft
. **D–558 aircraft**
RT ∞ aircraft

Dacron (trademark)
GS fabrics
. **Dacron (trademark)**
fibers
. synthetic fibers
. . **Dacron (trademark)**
RT polyester resins
reinforcing fibers

Dactyl
USE **natural satellites**

DAD Explorer
USE **Dual Air Density Explorer**

DAEMO (data analysis)
USE **data processing**
data reduction
data transmission

Dahomey
USE **Benin**

Dakota aircraft
USE **C–47 aircraft**

Dalton law
DEF The empirical generalization that for many so-called perfect gases, a mixture of these gases will have a pressure equal to the sum of the partial pressures that each of the gases would have as a sole component with the same volume and temperature, provided there is no chemical interaction.
RT gas composition
gas dynamics
gas–gas interactions
ideal gas
partial pressure
vapor pressure

DAMA
USE **demand assignment multiple access**

damage
GS **damage**
. cumulative damage
. earthquake damage
. fire damage
. flood damage
. frost damage
. impact damage
. . meteoritic damage
. . rain impact damage
. proton damage
. radiation damage
. . laser damage
. storm damage
RT burnthrough (failure)
corrosion
damage assessment
decay
decomposition
defects
deformation
degradation
destruction
deterioration
discoloration
disintegration
durability
fatigue (biology)
fatigue (materials)
fractures (materials)
hot corrosion
immobilization
impairment
injuries
lethality
losses
radiation effects
sabotage
warpage
wear
weathering

damage assessment
DEF Estimate of injury or loss to components, subsystems, or entire systems, as well as the cost of repairs or replacement to restore serviceability.
GS assessments
. **damage assessment**
RT casts
costs
damage
estimates
maintenance
recoverability
replacing
spare parts
value

damage threshold
USE **yield point**

Damkohler number
RT activation energy
combustion physics
diffusion flames
flame propagation
∞ numbers
reaction kinetics

DAMP program
USE **Downrange Antimissile Measurement Program**

∞ **dampers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT blankets (fission reactors)
dampers (valves)
nutation dampers
oscillation dampers
vibration isolators

dampers (valves)
GS valves
. butterfly valves
. . **dampers (valves)**
RT automatic control valves
∞ dampers
gas valves
vibration isolators

damping
DEF The suppression of oscillations or disturbances; the dissipation of energy with time. Used for damping factor, damping in pitch, damping in roll, damping in yaw, elastic stability, and jet damping.
UF *damping factor*
damping in pitch
damping in roll
damping in yaw
elastic stability
jet damping
GS **damping**
. elastic damping
. . viscoelastic damping
. Landau damping
. vibration damping
. viscous damping
. . viscoelastic damping
RT ∞ absorption
attenuation
baffles
deceleration
dissipation
dynamic characteristics

RT dynamic response
dynamic stability
energy absorption
gyroscope fluids
gyroscopic pendulums
gyroscopic stability
hysteresis
impedance
insulation
internal friction
mechanical impedance
mufflers
negative feedback
oscillations
∞ reduction
∞ resistance
resonant frequencies
resonant vibration
retarding
roll
sea keeping
shock absorbers
silencers
stability derivatives
stopping
subharmonic generators
suppressors
time constant
transfer functions
transient oscillations
transient response
vibration isolators
wave interaction

damping factor
USE **damping**

damping in pitch
USE **damping**
pitch (inclination)

damping in roll
USE **damping**

damping in yaw
USE **damping**
yaw

damping tests
GS vibration tests
. **damping tests**
. . stroking tests
RT resonance testing
stability tests
∞ tests
vibration measurement

dampness
USE **moisture content**

dams
RT ∞ barrages
∞ barriers
flood control
hydroelectricity
reservoirs
wharves

danger
USE **hazards**

Danish space program
(added August 1990)
GS programs
. space programs
. . European space programs
. . . **Danish space program**
RT Denmark

dark adaptation
DEF The process by which the iris and retina of the eye adjust to allow maximum vision in dim illumination, following exposure of the eye to a relatively brighter illumination.
GS adaptation
. retinal adaptation
. . **dark adaptation**
RT darkness
night vision
pupillometry
vision
visual pigments

dark current
(added October 1997)
UF *electrode dark current*
GS electric current
. **dark current**
RT low currents
photocathodes
photodiodes
photoelectric cells
phototubes
signal to noise ratios

dark matter
GS extraterrestrial matter
. interstellar matter
. . **dark matter**
matter (physics)
. **dark matter**
RT baryons
cooling flows (astrophysics)
cosmology
galactic evolution
galactic halos
intergalactic media
missing mass (astrophysics)
neutrinos
universe

darkening
GS **darkening**
. limb darkening
RT darkness
∞ illumination
night
visibility

darkness
RT color
dark adaptation
darkening
diurnal variations
illuminating
∞ illumination
light (visible radiation)
night
night flights (aircraft)
optical properties
shadows

darkrooms
GS rooms
. **darkrooms**
RT photographic processing
photographic processing equipment
photography

Dart turboprop engines
USE **turboprop engines**

Dash helicopter
USE **QH-50 helicopter**

Dassault aircraft
GS **Dassault aircraft**
. Mirage aircraft
. . Mirage 3 aircraft
. Mystere 20 aircraft
. Mystere 50 aircraft
RT ∞ aircraft

Dassault Mirage 3 aircraft
USE **Mirage 3 aircraft**

Dassault Mystere 20 aircraft
USE **Mystere 20 aircraft**

Dassault Mystere 50 aircraft
USE **Mystere 50 aircraft**

DAST program
SN (DRONES FOR AERODYNAMIC AND STRUCTURAL TESTING)
DEF A NASA program which uses the Firebee 2 target drone aircraft as a test bed for getting flight data on research wings. The drone is launched from the wing of a B52 and recovered by parachute. The program's purpose is the study of flight loads and load control. Used for drones for aerodynamic and struct test.
UF *Drones for Aerodynamic and Struct Test*
GS programs
. NASA programs
. . **DAST program**
RT aeroelasticity
aircraft control
aircraft design
drone aircraft
flight tests
flutter
remotely piloted vehicles
vibration damping

∞ **data**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT analog data
audio data
binary data
biomedical data
censored data (mathematics)
channels (data transmission)
control data (computers)
data acquisition
data base management systems
data bases
data collection platforms
data compression
data conversion routines
data converters
data correlation
data links
data management
data processing
data processing equipment
data processing terminals
data recorders
data recording
data reduction
data retrieval
data sampling
data smoothing
data storage
data systems
data transmission
datum (elevation)
digital data
end-to-end data systems
information
interservice data exchange program
∞ measurement
ocean data acquisitions systems
onboard data processing

optical data processing
optical data storage materials
optical memory (data storage)
printers (data processing)
radar data
records
site data processors
Space Flight Tracking and Data Network
statistical analysis
statistical tests
∞ statistics
tables (data)
video data
voice data processing
weather data recorders
world data centers

data acquisition
GS acquisition
. **data acquisition**
RT Advanced Range Instrumentation Aircraft
Alouette project
analog to digital converters
automatic weather stations
counting
∞ **data**
Deep Space Instrumentation Facility
detection
Earth observations (from space)
end-to-end data systems
forms (paper)
Global Tracking Network
ground stations
infrared radiometers
meteorological research aircraft
needs (data system)
news media
observation
ocean data acquisitions systems
optical data processing
optical scanners
remote sensors
∞ sensors
Space Flight Tracking and Data Network
STDN (network)
surveys
tables (data)
tracking networks

data adaptive evaluator/monitor
USE **data processing**
data reduction
data transmission

data analysis
USE **data processing**
data reduction

data base management systems
DEF Software products that control data structures containing interrelated data stored so as to optimize accessibility and control, minimize redundancy, and offer multiple views of the data to various applications programs.
RT ∞ data
data bases
data management
information management
management information systems
relational data bases
∞ systems

data bases
GS **data bases**
. knowledge bases (artificial intelligence)
. numerical data bases
. relational data bases
RT ∞ bases
CD-ROM
∞ data
data base management systems
data structures
software engineering

data busses
USE **channels (data transmission)**

data collection platforms
RT Argos system
automatic weather stations
∞ data
ground stations
instrument packages
Integrated global ocean station systems
∞ platforms
remote sensors

data compaction
USE **data compression**

data compression
DEF Any technique used to reduce the amount of storage required to store data.
UF *data compaction*
GS **data compression**
. video compression
RT curve fitting
∞ data
decoding
discrete cosine transform
Fourier analysis
telecommunication
telemetry
vector quantization

data conversion routines
GS **data conversion routines**
. subroutines
RT algorithms
compilers
computer programs
∞ conversion
∞ data
∞ routines

data converters
GS **data converters**
. analog to digital converters
. binary to decimal converters
. decimal to binary converters
. digital to analog converters
RT analog circuits
analog data
computers
conversion tables
∞ converters
∞ data
decoders
digital data
transducers
video data

data correlation
GS correlation
. **data correlation**
data processing
. **data correlation**
RT angular correlation
autocorrelation
cross correlation
∞ data
statistical analysis
statistical correlation
teleconnections (meteorology)
temperature ratio

data flow analysis
RT computer programs
computer systems programs
data simulation
data transfer (computers)
flow charts
network analysis
sequential control

data fusion
USE **multisensor fusion**

data handling systems
USE **data systems**

data integration
DEF Taking data from multiple sources and merging the data into a single data file.
RT data management
data simulation
multisensor fusion

data links
DEF Communications channels or circuits used to transmit data from a sensor to a computer, a readout device or a storage device.
GS telecommunication
. **data links**
RT channels (data transmission)
communication networks
∞ data
decommutators
discrete address beacon system
frequency reuse
∞ links
networks
protocol (computers)
radio receivers
radio relay systems
remote consoles
site data processors
telemetry
VSAT (network)
wireless communication

data management
GS management
. **data management**
RT ∞ data
data base management systems
data integration
data simulation
frames (data processing)
information resources management
on-line systems
records management
relational data bases
surveys
tables (data)
virtual memory systems

data processing
SN (LIMITED TO MECHANICAL OR ELECTRONIC MANIPULATION OF DATA)
DEF Application of procedures, mechanical, electrical, computational, or other whereby data are changed from one form to another. Used for automatic data processing, DAEMO (data analysis), data adaptive evaluator/monitor, and data analysis.
UF *automatic data processing*
DAEMO (data analysis)
data adaptive evaluator/monitor

data analysis
GS **data processing**
. associative processing (computers)
. batch processing
. censored data (mathematics)
. Central Electronic Management System
. concurrent processing
. data correlation
. data reduction
. . data smoothing
. data retrieval
. data storage
. data transfer (computers)
. distributed processing
. Karhunen–Loeve expansion
. multiprocessing (computers)
. onboard data processing
. optical data processing
. parallel processing (computers)
. pipelining (computers)
. scene analysis
. signal analysis
. . cepstral analysis
. signal processing
. vector processing (computers)
. voice data processing
. . cepstral analysis
RT **access time**
adjoints
airborne/spaceborne computers
analog data
Atmospheric & Oceanographic Inform Sys
∞ **automation**
binary data
binary to decimal converters
bubble memory devices
channels (data transmission)
computation
computer information security
computer programs
computer systems programs
computers
∞ **data**
data structures
decimal to binary converters
digital computers
digital data
editing
editing routines (computers)
end–to–end data systems
fixed point arithmetic
floating point arithmetic
frames (data processing)
image processing
information resources management
information retrieval
information theory
interrogation
language programming
mechanization
microprocessors
natural language (computers)
needs (data system)
on–line systems
peripheral equipment (computers)
preprocessing
∞ **processing**
protocol (computers)
RCA computers
records
response time (computers)
site data processors
symbols
systems engineering
tables (data)
tabulation processes
telecommunication
word processing

data processing equipment
DEF **Machines** for handling information in a sequence of reasonable operations. Used for data processors.
UF *data processors*
GS **data processing equipment**
. computers
. . analog computers
. . . EAI 680 computer
. . . Honeywell 600/6000 computer
. . . SIGMA 5 computer
. . . Univac 1100 series computers
. . . . Univac 1105 computer
. . . . Univac 1106 computer
. . . . Univac 1107 computer
. . . . Univac 1108 computer
. . . . Univac 1110 computer
. . CDC computers
. . . CDC 160–A computer
. . . CDC 1604 computer
. . . CDC 3100 computer
. . . CDC 3200 computer
. . . CDC 3600 computer
. . . CDC 3800 computer
. . . CDC 6000 series computers
. . . . CDC 6400 computer
. . . . CDC 6600 computer
. . . . CDC 6700 computer
. . . CDC 7000 series computers
. . . . CDC 7600 computer
. . . CDC 8090 computer
. . . CDC Cyber 170 series computers
. . . . CDC Cyber 175 computer
. . . CDC Cyber 74 computer
. . . CDC Cyber 174 computer
. . . CDC Cyber 203 computer
. . . CDC Cyber 205 computer
. . . CDC Star 100 computer
. . counting rate computers
. . DDP computers
. . . DDP 516 computer
. . digital computers
. . . CDC 160–A computer
. . . CDC 1604 computer
. . . CDC 3100 computer
. . . CDC 3200 computer
. . . CDC 3600 computer
. . . CDC 3800 computer
. . . CDC 6000 series computers
. . . . CDC 6400 computer
. . . . CDC 6600 computer
. . . . CDC 6700 computer
. . . CDC 7000 series computers
. . . . CDC 7600 computer
. . . CDC 8090 computer
. . . CDC Cyber 170 series computers
. . . . CDC Cyber 175 computer
. . . CDC Cyber 74 computer
. . . CDC Cyber 174 computer
. . . CDC Cyber 203 computer
. . . CDC Cyber 205 computer
. . . CDC Star 100 computer
. . . EAI 680 computer
. . . EAI 8400 computer
. . . EAI 8900 computer
. . . EMR 6050 computer
. . . Ferranti Mercury computer
. . . GE computers
. . . . GE 625 computer
. . . . GE 635 computer
. . . Hewlett–Packard computers
. . . Honeywell computers
. . . . DDP 516 computer
. . . . Honeywell 600/6000 computer
. . . . Honeywell ADEPT computer
. . . . Honeywell DDP 116 computer
. . . IBM 360 computer
. . . IBM 370 computer
. . . IBM 650 computer
. . . IBM 704 computer
. . . IBM 709 computer
. . . IBM 1130 computer
. . . IBM 1401 computer
. . . IBM 1410 computer
. . . IBM 1620 computer
. . . IBM 2250 computer
. . . IBM 7030 computer
. . . IBM 7040 computer
. . . IBM 7044 computer
. . . IBM 7070 computer
. . . IBM 7074 computer
. . . IBM 7090 computer
. . . IBM 7094 computer
. . . ICL computers
. . . Illiac computers
. . . . Illiac 3 computer
. . . . Illiac 4 computer
. . . microcomputers
. . . . personal computers
. . . . . IBM personal computers
. . . . . Macintosh personal computers
. . . minicomputers
. . . . Nova computers
. . . Modcomp II computer
. . . Modcomp IV computer
. . . parallel computers
. . . . massively parallel processors
. . . . . Connection Machine
. . . . MIMD (computers)
. . . . SIMD (computers)
. . . PDP 15 computer
. . . PDP computers
. . . . PDP 7 computer
. . . . PDP 8 computer
. . . . PDP 9 computer
. . . . PDP 10 computer
. . . . PDP 11 computer
. . . . PDP 11/20 computer
. . . . PDP 11/40 computer
. . . . PDP 11/45 computer
. . . . PDP 11/50 computer
. . . . PDP 11/70 computer
. . . . PDP 12 computer
. . . Philco 2000 computer
. . . Raytheon computers
. . . RCA spectra 70 computer
. . . SDS 900 series computers
. . . . SDS 930 computer
. . . SDS 9300 computer
. . . SEL computers
. . . sequential computers
. . . SIGMA 5 computer
. . . SIGMA computers
. . . . SIGMA 9 computer
. . . Solomon computers
. . . Univac 1100 series computers
. . . . Univac 1105 computer
. . . . Univac 1106 computer
. . . . Univac 1107 computer
. . . . Univac 1108 computer
. . . . Univac 1110 computer
. . . Univac 80 computer
. . . Univac 418 computer
. . . Univac 490 computer
. . . Univac 494 computer
. . . Univac 1230 computer
. . . Univac Larc computer

. . . VAX computers
. . . . VAX-11 series computers
. . . . . VAX-11/780 computer
. . embedded computer systems
. . . airborne/spaceborne computers
. . hybrid computers
. . hypercube multiprocessors
. . IBM computers
. . . IBM 360 computer
. . . IBM 370 computer
. . . IBM 650 computer
. . . IBM 704 computer
. . . IBM 709 computer
. . . IBM 1130 computer
. . . IBM 1401 computer
. . . IBM 1410 computer
. . . IBM 1620 computer
. . . IBM 2250 computer
. . . IBM 7030 computer
. . . IBM 7040 computer
. . . IBM 7044 computer
. . . IBM 7070 computer
. . . IBM 7074 computer
. . . IBM 7090 computer
. . . IBM 7094 computer
. . . IBM personal computers
. . MINOS computer
. . optical computers
. . Pegasus computer
. . RCA computers
. . . RCA spectra 70 computer
. . . RCA-110 computers
. . Siemens 2002 computer
. . site data processors
. . supercomputers
. . . Connection Machine
. . . Cray computers
. . transputers
. . Univac computers
. . . Univac 1100 series computers
. . . . Univac 1105 computer
. . . . Univac 1106 computer
. . . . Univac 1107 computer
. . . . Univac 1108 computer
. . . . Univac 1110 computer
. . . Univac 80 computer
. . . Univac 418 computer
. . . Univac 490 computer
. . . Univac 494 computer
. . . Univac 1230 computer
. . . Univac Larc computer
. data processing terminals
. . VSAT (network)
. microprocessors
. . Intel 8080 microprocessor
. peripheral equipment (computers)
. . printers (data processing)
. . remote consoles
RT batch processing
computer compatible tapes
computer systems simulation
control units (computers)
∞ data
digital radar systems
∞ equipment
interfaces
multiprocessing (computers)
optical data processing
pipelining (computers)
printers
simulation

data processing terminals
GS data processing equipment
. **data processing terminals**
. . VSAT (network)
RT computer graphics
consoles
∞ data
human–computer interface
man machine systems
remote consoles
∞ terminals

data processors
USE **data processing equipment**

data readout systems
USE **data systems**
display devices

data recorders
GS **data recorders**
. flight recorders
. . flight load recorders
. weather data recorders
RT bubble memory devices
bubble technique
counters
∞ data
display devices
monitors
punched cards
∞ recorders
recording instruments
tape recorders
video disks

data recording
GS recording
. **data recording**
RT bubble memory devices
∞ data
magnetic recording
magnetic storage
optical data storage materials
photographic recording
punched cards
punched tapes
recording heads
records
tables (data)
tabulation processes
video disks

data reduction
DEF Transformation of observed values into useful, ordered, or simplified information. Used for DAEMO (data analysis), data adaptive evaluator/monitor, data analysis, and TARE (data reduction).
UF *DAEMO (data analysis)*
data adaptive evaluator/monitor
data analysis
TARE (data reduction)
GS data processing
. **data reduction**
. . data smoothing
RT computation
∞ data
editing
preprocessing
∞ reduction
tables (data)

data retrieval
GS data processing
. **data retrieval**
retrieval
. **data retrieval**
RT ∞ data
data transfer (computers)
documentation
information management
information retrieval
interservice data exchange program
libraries
management information systems
microfilms
relational data bases
search profiles
tables (data)
telemetry
world data centers

data sampling
GS sampling
. **data sampling**
RT computer systems performance
∞ data
quality control
sampled data systems
telecommunication
time series analysis

data simulation
DEF The use of statistical or physical models to produce synthetic data for testing purposes.
GS simulation
. **data simulation**
RT data flow analysis
data integration
data management

data smoothing
DEF The mathematical process of fitting a smooth curve to dispersed data points.
GS data processing
. data reduction
. . **data smoothing**
recording
. **data smoothing**
smoothing
. **data smoothing**
RT curve fitting
∞ data

data storage
GS data processing
. **data storage**
RT bubble memory devices
buffer storage
cards
core storage
∞ data
data transfer (computers)
document storage
flip-flops
holography
information management
interservice data exchange program
magnetic storage
management information systems
microfilms
microphotographs
optical data storage materials
optical disks
punched cards
selective dissemination of information
∞ storage
video disks
virtual memory systems
white light holography
world data centers

data structures
DEF The organization of computer memory used to represent information in a computer program or database.
RT computer programming
data bases

data processing
knowledge based systems
structured programming

data systems
UF *data handling systems*
data readout systems
GS **data systems**
. air data systems
. needs (data system)
RT Atmospheric & Oceanographic Inform Sys
control data (computers)
∞ data
data transfer (computers)
digital systems
Earth Resources Information System
end-to-end data systems
geographic information systems
management information systems
∞ systems

data transfer (computers)
DEF The technique used by the hardware manufacturer to transmit data from computer to storage device or from storage device to computer, usually under specialized program control.
GS data processing
. **data transfer (computers)**
RT asynchronous transfer mode
computer programs
data flow analysis
data retrieval
data storage
data systems
data transmission
input/output routines

data transmission
UF *DAEMO (data analysis)*
data adaptive evaluator/monitor
information transmission
GS transmission
. signal transmission
. . **data transmission**
. . . automatic picture transmission
. . . multiple access
. . . . Aloha system
. . . . code division multiple access
. . . . demand assignment multiple access
. . . . frequency division multiple access
. . . . time division multiple access
. . . packet transmission
. . . . Aloha system
. . . single channel per carrier transmission
RT access control
Argos system
asynchronous transfer mode
audio data
automatic repeat request
carrier to noise ratios
channels (data transmission)
code division multiplexing
coding
communication theory
concatenated codes
∞ data
data transfer (computers)
Deep Space Instrumentation Facility
electronic mail
FM/PM (modulation)
frequency division multiplexing
information theory
intersymbolic interference
laser applications
local area networks
modems
multiplexing
packet switching
packets (communication)
protocol (computers)
pulse communication
radio telemetry
radio transmission
reading
redundancy encoding
satellite transmission
ship to shore communication
TDR satellites
telecommunication
telemetry
transmission efficiency
transmission rate (communications)
video data
VSAT (network)
wireless communication

data visualization
USE **scientific visualization**

dating
USE **chronology**
time measurement

datum (elevation)
RT clearances
contours
∞ data
elevation angle
hypsography
leveling
maps
surveys

dawn chorus
UF *chorus (dawn phenomenon)*
chorus phenomenon
GS atmospheric radiation
. **dawn chorus**
electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . atmospherics
. . . . ionospherics
. . . . . **dawn chorus**
RT auroras
magnetic storms
whistlers

dawsonite
DEF A mineral consisting of aluminum sodium carbonate.
GS minerals
. **dawsonite**
RT aluminum
sodium
sodium carbonates

daytime
GS atmospheric radiation
. sky radiation
. . **daytime**
electromagnetic radiation
. light (visible radiation)
. . sky radiation
. . . **daytime**
RT glare
light sources
sky
solar radiation
twilight glow
ultraviolet radiation

daytime
RT diurnal variations
evening
morning
night
noon
sky brightness

DBR lasers
(added November 1991)
UF *distributed Bragg reflector lasers*
GS electronic equipment
. solid state devices
. . solid state lasers
. . . **DBR lasers**
stimulated emission devices
. lasers
. . solid state lasers
. . . **DBR lasers**
RT Bragg angle
Bragg reflectors
distributed feedback lasers
semiconductor lasers
tunable lasers

DBS (satellites)
USE **direct broadcast satellites**

DC (current)
USE **direct current**

DC generators
(added July 1991)
UF *direct current generators*
GS electric generators
. direct power generators
. . **DC generators**
. . . homopolar generators
RT ∞ generators
rotating generators

DC 3 aircraft
UF *Douglas DC-3 aircraft*
GS commercial aircraft
. **DC 3 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **DC 3 aircraft**
monoplanes
. **DC 3 aircraft**
transport aircraft
. cargo aircraft
. . **DC 3 aircraft**
RT ∞ aircraft

DC 7 aircraft
UF *Douglas DC-7 aircraft*
GS commercial aircraft
. **DC 7 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **DC 7 aircraft**
monoplanes
. **DC 7 aircraft**
transport aircraft
. cargo aircraft
. . **DC 7 aircraft**
RT ∞ aircraft
passenger aircraft

DC 8 aircraft
UF *Douglas DC-8 aircraft*
GS commercial aircraft
. **DC 8 aircraft**
jet aircraft
. turbofan aircraft
. . **DC 8 aircraft**

McDonnell Douglas aircraft
. Douglas aircraft
. . **DC 8 aircraft**
monoplanes
. **DC 8 aircraft**
passenger aircraft
. **DC 8 aircraft**
transport aircraft
. **DC 8 aircraft**
RT ∞ aircraft

DC 9 aircraft
UF *Douglas DC-9 aircraft*
GS commercial aircraft
. **DC 9 aircraft**
jet aircraft
. **DC 9 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **DC 9 aircraft**
transport aircraft
. **DC 9 aircraft**
RT ∞ aircraft
MD 80 aircraft

DC 10 aircraft
GS commercial aircraft
. **DC 10 aircraft**
jet aircraft
. **DC 10 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **DC 10 aircraft**
. Mcdonnell aircraft
. . **DC 10 aircraft**
passenger aircraft
. **DC 10 aircraft**
transport aircraft
. **DC 10 aircraft**
RT ∞ aircraft
turbofan engines

DC 11 aircraft
USE **MD 11 aircraft**

DCT (mathematics)
USE **discrete cosine transform**

DDP 516 computer
GS data processing equipment
. computers
. . DDP computers
. . . **DDP 516 computer**
. . digital computers
. . . Honeywell computers
. . . . **DDP 516 computer**

DDP computers
GS data processing equipment
. computers
. . **DDP computers**
. . . DDP 516 computer
RT digital computers

DDT
UF *dichlorodiphenyltrichloroethane*
GS halogen compounds
. chlorine compounds
. . **DDT**
poisons
. pesticides
. . insecticides
. . . **DDT**

de Broglie wavelengths
GS wavelengths
. **de Broglie wavelengths**
RT elementary particles
mass
momentum
Plancks constant
quantum theory
velocity
Wentzel–Kramer–Brillouin method

de Havilland aircraft
GS **de Havilland aircraft**
. Comet 4 aircraft
. DH 112 aircraft
. DH 115 aircraft
. DH 121 aircraft
. DH 125 aircraft
. DHC 2 aircraft
. DHC 4 aircraft
. DHC 5 aircraft
RT ∞ aircraft

de Havilland DH 106 aircraft
USE **Comet 4 aircraft**

de Havilland DH 112 aircraft
USE **DH 112 aircraft**

de Havilland DH 115 aircraft
USE **DH 115 aircraft**

de Havilland DH 121 aircraft
USE **DH 121 aircraft**

de Havilland DH 125 aircraft
USE **DH 125 aircraft**

de Havilland DHC 4 aircraft
USE **DHC 4 aircraft**

de Havilland DHC 5 aircraft
USE **DHC 5 aircraft**

de Havilland Venom aircraft
USE **DH 112 aircraft**

de Laval nozzles
USE **convergent–divergent nozzles**

deacclimatization
USE **acclimatization**

deactivation
UF *inactivation*
RT activation
passivity
polarization (charge separation)
polarization (spin alignment)
sabotage
shutdowns

dead reckoning
DEF In navigation, determination of position by advancing a previous known position for courses and distances.
GS navigation
. **dead reckoning**
RT air navigation
digital navigation
Doppler navigation
inertial navigation
polar navigation
radar navigation
radio navigation
surface navigation

deadweight
USE **static loads**

deafness
USE **auditory defects**

death
RT casualties
expiration
injuries
life span
mortality

Death Valley (CA)
GS landforms
. **Death Valley (CA)**
valleys
. **Death Valley (CA)**
RT arid lands
California
desertification
deserts
river basins

Debonair aircraft
USE **C-33 aircraft**

debonding (materials)
(added July 1992)
SN (LIMITED TO THE SEPARATION OF BONDED MATERIALS; NOT TO BE USED FOR THE BREAKUP OF ATOMIC/MOLECULAR BONDS)
RT anodic stripping
bonding
delaminating
fiber composites
laminates
matrix materials
peeling
reinforcing fibers
∞ separation

debris
GS **debris**
. space debris
RT ejecta
environment effects
fragments
glacial drift
pollution
∞ radioactive debris
scrap
wastes

debugging
USE **checkout**

Debye length
DEF A theoretical length which describes the maximum separation at which a given electron will be influenced by the electric field of a given positive ion.
GS distance
. **Debye length**
RT plasmas (physics)

Debye temperature
USE **specific heat**

Debye–Huckel theory
RT dissociation
electrolytes
plasma potentials
∞ theories

Debye–Scherrer method
RT crystallography
diffraction
∞ methodology

decametric waves
GS electromagnetic radiation
. radio waves
. . **decametric waves**
RT coronal holes
high frequencies
very high frequencies

decarbonation
GS chemical reactions
. **decarbonation**
RT carbonization

decarboxylation
GS chemical reactions
. **decarboxylation**
RT carboxylation

decarburization
RT carbon
carburizing
heating
metal working

decay
DEF Decrease of a radioactive substance because of nuclear emission of alpha or beta particles, positrons, or gamma rays.
GS **decay**
. particle decay
. . neutron decay
. plasma decay
. radioactive decay
. . alpha decay
. . neutron emission
. spacecraft glow
. weak energy interactions
. . weak interactions (field theory)
RT beta particles
biodegradability
biodegradation
damage
degradation
deterioration
disintegration
emission
gamma rays
half life
hot atoms
nuclear fission
radiative lifetime

decay rates
GS rates (per time)
. **decay rates**
. . electron decay rate

Decca navigation
DEF A long range, ambiguous, two dimensional navigation system using continuous wave transmission to provide hyperbolic lines of position through the radio frequency phase comparison techniques from four transmitters.
GS navigation
. radio navigation
. . hyperbolic navigation
. . . **Decca navigation**
RT distance measuring equipment
loran
loran C
loran D
navigation aids
Shoran
solar compasses
surface navigation

deceleration
DEF The act or process of moving, or cause to move, with decreasing speed.
GS rates (per time)
. acceleration (physics)
. . **deceleration**
. . . spin reduction
RT angular acceleration
braking
damping
impact
impact acceleration
landing loads
physiological acceleration
∞ reduction
retarding
retrofiring
retrothrust
stopping
tapering
thrust reversal

decelerators
USE **brakes (for arresting motion)**

deception
RT air defense
chaff
electronic countermeasures
electronic warfare
optical countermeasures
simulation

deciduous trees
GS plants (botany)
. trees (plants)
. . **deciduous trees**
RT conifers
Earth resources
foliage
forests
leaves
timber identification

decimal to binary converters
GS data converters
. **decimal to binary converters**
RT binary data
binary to decimal converters
computer components
data processing

decimals
RT digits
number theory
∞ numbers

decimeter waves
GS electromagnetic radiation
. radio waves
. . short wave radiation
. . . microwaves
. . . . **decimeter waves**
RT millimeter waves
planetary radiation
solar radio emission
ultrahigh frequencies

decision aids
USE **decision support systems**

decision elements
USE **logical elements**

decision making
RT cognition
command and control
contract management
contract negotiation
decision support systems
decisions
economy
judgments
management
management methods
management planning
problem solving
Stansite program
systems engineering
tradeoffs

decision support systems
(added October 1997)
UF *decision aids*
GS information systems
. **decision support systems**
support systems
. **decision support systems**
RT artificial intelligence
computer techniques
decision making
expert systems
knowledge based systems
pilot support systems
problem solving

decision theory
GS **decision theory**
. statistical decision theory
RT dynamic programming
expectation
game theory
information theory
martingales
mathematical models
operations research
probability theory
recommendations
risk
scheduling
statistical analysis
stochastic processes
strategy
∞ synthesis
systems engineering
∞ theories

decisions
RT ∞ commands
contract management
decision making
judgments
logic circuits
management
procurement policy
project planning
selection

decks (floors)
USE **floors**

declination
DEF Angular distance north or south of the celestial equator; the arc of an hour circle between the celestial equator and a point on the celestial sphere, measured northward or southward from the celestial equator through 90 degrees, and labeled N or S to indicate the direction of measurement.
RT mapping
navigation

decoders
DEF Devices for translating electrical signals into predetermined functions. In computer operations, networks or devices in which one of two or more possible outputs results from a prescribed combination of inputs.
GS **decoders**
. Viterbi decoders
RT BCH codes
coders
data converters
decoding
demodulators
Read-Solomon codes
∞ translators

decoding
GS coding
. **decoding**
RT BCH codes
concatenated codes
cryptography
data compression
decoders
demodulation
dictionaries
∞ interpretation
translating
Viterbi decoders

decommissioning
DEF Disposal or deactivation of equipment or sites whose usefulness has diminished to a point where it is no longer required for its original purpose.
RT radioactive wastes
underground storage

decommutators
DEF Equipment for separation, demodulation, or demultiplexing commutated signals.
GS commutators
. **decommutators**
RT data links
demodulators
differential pulse code modulation
electric motors
∞ generators
pulse code modulation
telemetry

decomposition
GS **decomposition**
. ammonolysis
. cracking (chemical engineering)
. . hydrocracking
. . pyrolysis
. glycolysis
. hydrogenolysis
. . hydrocracking
. nitrolysis
. photodecomposition
. photodissociation
. photolysis
. propellant decomposition
. radiolysis
. thermal decomposition
. . pyrolysis
RT ablation
biodegradability
biodegradation
charring
damage
degradation
deterioration
disintegration
dissociation
electrolysis
laterites
overvoltage
storage stability
thermal dissociation

decompression
USE **pressure reduction**

decompression sickness
DEF A disorder experienced by deep sea divers and aviators caused by reduced atmospheric pressure and evolved gas bubbles in the body, marked by pain in the extremities, pain in the chest (chokes), occasionally leading to severe central nervous system symptoms and neurocirculatory collapse. Used for bends (physiology).
UF *bends (physiology)*
GS sicknesses
. **decompression sickness**
RT aeroembolism
altitude sickness
barotrauma
diving (underwater)

deconditioning
GS behavior
. **deconditioning**
RT learning
reflexes

decongestants
GS drugs
. **decongestants**
RT antihistaminics

decontamination
GS **decontamination**
. spacecraft sterilization
RT air purification
antiseptics
carbon dioxide concentration
carbon dioxide removal
cleaning
contaminants
contamination
dewaxing
disposal
dissipation
elimination
ethylene oxide
exhausting
extensions
∞ food
pollution
purging
purification
purity
∞ reduction
∞ separation
spacecraft contamination
sterilization
sterilization effects
washing

decoupling
GS **decoupling**
. spin decoupling
RT coupling
disconnect devices
gravitinos
releasing

decoys
GS **decoys**
. ballistic missile decoys
. Blue Goose missile
. quail missile
. reentry decoys
RT countermeasures
dummies

decrementing
USE **reduction**

deduction
RT derivation
inference

deep drawing
RT bulging
cold drawing
cold working
explosive forming
magnetic forming
metal working
stretching

deep scattering layers
RT acoustic scattering
echo sounding
∞ layers
oceanography
organisms
scattering
sound waves
underwater acoustics

deep space
GS environments
. aerospace environments
. . **deep space**
. . . interplanetary space
. . . interstellar space
. extraterrestrial environments
. . **deep space**
. . . interplanetary space
. . . interstellar space
RT cislunar space
frictionless environments
long duration space flight
∞ **space**

Deep Space Instrumentation Facility
UF *DSIF (instrumentation facility)*
GS **stations**
. ground **stations**
. . **Deep Space Instrumentation Facility**
. tracking stations
. . **Deep Space Instrumentation Facility**
RT data acquisition
data transmission
radio control

Deep Space Network
DEF A communications network managed by the Jet Propulsion Laboratory for command and control of all planetary flights.
UF *DSN (space network)*
GS networks
. communication networks
. . **Deep Space Network**
. tracking networks
. . **Deep Space Network**
RT spacecraft tracking

deep water
GS water
. **deep water**
RT ocean bottom
oceanography
oceans
seas

deep well injection (wastes)
DEF Storage of liquid wastes, particularly chlorohydrocarbons, by injection into subsurface geologic strata for long term isolation from the environment.
GS injection
. fluid injection
. . liquid injection
. . . **deep well injection (wastes)**
RT waste disposal

deepwater terminals
RT artificial harbors
cargo ships
marine technology
marine transportation

oceanography
offshore docking
offshore energy sources
offshore platforms
∞ ports
ship terminals
tanker ships
tanker terminals
∞ tankers
terminal facilities
transportation

deer
GS animals
. vertebrates
. . mammals
. . . **deer**
. . . . caribous
RT grazing
livestock

defects
UF *flaws*
imperfections
GS **defects**
. auditory defects
. crystal defects
. . crystal dislocations
. . . edge dislocations
. . . screw dislocations
. . point defects
. . . vacancies (crystal defects)
. . . . Frenkel defects
. . . antisite defects
. hyperopia
. inclusions
. speech defects
. surface defects
RT castings
cavities
cracks
cumulative damage
damage
inhomogeneity
irregularities
leakage
pinholes
porosity
scoring
vignetting
voids
x ray analysis

Defender project
GS programs
. projects
. . **Defender project**

∞ **defense**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT air defense
antimissile defense
civil defense
Defense Communications Satellite System
defense communications system (DCS)
defense industry
defense program
DMSP satellites
missile defense
physiological defenses

Defense Communications Satellite System
GS telecommunication
. **Defense Communications Satellite System**
. . Fleet Satellite Communication System
RT communication satellites
∞ defense
radio relay systems
space communication
∞ systems

defense communications system (DCS)
GS networks
. **defense communications system (DCS)**
telecommunication
. **defense communications system (DCS)**
RT communication networks
∞ defense
military technology
∞ systems

defense industry
GS industries
. **defense industry**
. . weapons industry
RT antimissile defense
∞ defense
military technology
missile defense

Defense Meteorological Satellite Program
USE **DMSP satellites**

defense program
GS programs
. **defense program**
RT air defense
antimissile defense
armed forces (United States)
civil defense
∞ defense
DMSP satellites
military technology
missile defense
space transportation system
weapons delivery

definition
RT accuracy
delineation
descriptions
dictionaries
∞ measurement
nomenclatures
precision
resolution

deflagration
DEF A sudden or rapid burning, as opposed to a detonation or explosion.
GS combustion
. **deflagration**
RT backfire
fires
flashback

deflating
USE **inflatable structures**
pressure reduction

deflection
RT bending
bending diagrams
camber
deformation
diffraction
dispersing
displacement
distortion
elastic deformation
flexing
Maxwell–Mohr method
reflection
refraction
scattering
structural strain
temperature inversions
torsion
variations
wave dispersion
yokes

deflectors
DEF Plates, baffles, or the like that divert something in its movement or flow.
GS **deflectors**
. blast deflectors
. flame deflectors
RT attenuators
baffles
∞ diffusers
diverters
flow deflection
gust alleviators
reflectors
safety devices
shielding
spoilers

defluorination
GS chemical reactions
. **defluorination**
RT fluorination
halogenation

defocusing
GS focusing
. **defocusing**
RT ∞ optics

defoliants
RT defoliation
foliage
forests
herbicides
leaves
plants (botany)
trees (plants)

defoliation
RT brush (botany)
defoliants
deforestation
forests
grasses
leaves
plants (botany)
trees (plants)

deforestation
RT biological diversity
clearings (openings)
conservation
defoliation
environment effects
forests

deformation
DEF A change in the shape or size of a solid body.
GS **deformation**
. axial strain
. elastic deformation
. . elastic bending
. . elastic buckling
. nuclear deformation
. plastic deformation
. static deformation

. tensile deformation
. wave front deformation
RT bending
buckling
camber
collapse
corrugating
creep properties
damage
deflection
deformeters
displacement
distortion
elongation
failure
flexing
fractures (materials)
indentation
mechanical properties
Portevin–le Chatelier effect
set
skewness
stiffness
strain distribution
structural failure
structural strain
temperature inversions
topology
torsion
twisting
volumetric strain
warpage
wrinkling

deformeters
GS measuring instruments
. **deformeters**
RT deformation
dimensional measurement
extensometers
mechanical measurement
strain gages
stress measurement
tensometers

defrosting
RT deicing
heating
ice prevention
melting
refrigerating
refrigerators

degassing
DEF The deliberate removal of gas from a material, usually by application of heat under high vacuum. Used for bakeout.
UF *bakeout*
GS **degassing**
. deoxygenation
RT absorbers (equipment)
aeration
baking
castings
deoxidizing
desorption
gas evolution
occlusion
offgassing
outgassing
purging
scavenging
∞ separation

degenerate matter
DEF A state of matter found in white dwarf stars and other ultrahigh-density objects in which the electrons follow Fermi–Dirac statistics, i.e., the matter reaches a density high enough so that the pressure increases more and more rapidly to the point where it becomes independent of the temperature and is a function of the density only, thereby departing from the classical laws of physics.
GS matter (physics)
. **degenerate matter**
RT antimatter
astrophysics
black holes (astronomy)
cosmic gases
critical pressure
density (mass/volume)
extraterrestrial matter
Fermi–Dirac statistics
high pressure
massive stars
naked singularities
neutron stars
nuclear fusion
∞ physics
pulsars
rotating matter
stellar cores
stellar evolution
stellar mass
supermassive stars
white dwarf stars

degeneration
RT atrophy
deterioration
negative feedback

degenerative feedback
USE **negative feedback**

degradation
DEF Gradual deterioration in performance.
GS **degradation**
. biodegradation
. thermal degradation
. wave degradation
RT chemical attack
corrosion
cumulative damage
curing
damage
decay
decomposition
depolymerization
deterioration
discoloration
durability
embrittlement
erosion
hot corrosion
oxidation
pitting
preserving
rusting
scale (corrosion)
sterilization effects
thermal dissociation
weathering

degrees of freedom
DEF A mode of motion, either angular or linear, with respect to a coordinate system, independent of any other mode. A body in motion has six possible degrees of freedom, three linear and three angular.
RT equipartition theorem
experiment design
factor analysis
null hypothesis
phase rule
quality control
significance
three dimensional motion
torquers
∞ variance

DEHP
USE **diethyl hydrogen phosphite (DEHP)**

dehumidification
DEF The reduction, by any process, of the quantity of water vapor within a given space.
GS drying
dehumidification
RT condensing
cooling systems
dehydration
diffusion
humidity
refrigerating
∞ separation
silica gel

dehydrated food
RT consumables (spacecrew supplies)
dehydration
drying apparatus
∞ food
food processing
freeze drying
preserving
space flight feeding

dehydration
GS drying
. **dehydration**
RT columns (process engineering)
dehumidification
dehydrated food
dewatering
evaporation
freeze drying
hydration
plasmolysis
∞ separation
silica gel
thermogravimetry
water loss

dehydrogenation
GS chemical reactions
. **dehydrogenation**
RT columns (process engineering)
hydroforming
hydrogenation
hydrogenolysis
oxidation
reduction (chemistry)

deicers
UF *deicing systems*
RT aircraft icing
airfoils
antiicing additives
deicing
∞ heaters
heating equipment
ice prevention

deicing
RT aircraft icing
airfoils
antiicing additives
defrosting
deicers
∞ heaters

heating equipment
ice prevention
melting

deicing systems
USE **deicers**

Deimos
DEF A satellite of Mars orbiting at a mean distance of 23,500 kilometers.
GS **celestial bodies**
. **natural satellites**
. . **Mars satellites**
. . . **Deimos**
RT Charon
Mars (planet)
Phobos

deionization
DEF The removal of ions from a solution by ion exchange.
GS chemical reactions
. **deionization**
RT atomic recombination
demineralizing
exchanging
ion recombination
radiative recombination
∞ separation
softening

dekatrons
USE **counters**

delaminating
RT anodic stripping
debonding (materials)
interlaminar stress
peeling
∞ separation

Delaware
GS nations
. United States
. . **Delaware**
RT Delaware River Basin (US)
Delmarva Peninsula (DE–MD–VA)

Delaware Bay (US)
GS bays (topographic features)
. **Delaware Bay (US)**
RT Atlantic Ocean
gulfs
inlets (topography)
New Jersey
Pennsylvania

Delaware River Basin (US)
GS landforms
. structural basins
. . river basins
. . . **Delaware River Basin (US)**
RT Delaware
New Jersey
New York
Pennsylvania
rivers
streams
valleys

delay
RT dwell
∞ holding
lateness
stopping
time lag
∞ time response
transmission rate (communications)

delay circuits
GS circuits
. **delay circuits**
. . phantastrons
RT acoustic delay lines
circulators (phase shift circuits)
comparator circuits
phase shift circuits

delay lines
GS **delay lines**
. **acoustic delay lines**
. **delay lines (computer storage)**
RT ∞ lines
time lag

delay lines (computer storage)
DEF In electronic computers, devices for producing a time delay of a signal.
GS computer components
. computer storage devices
. . **delay lines (computer storage)**
delay lines
. **delay lines (computer storage)**
RT shift registers

deletion
GS elimination
. **deletion**
RT disposal
removal

Delfin aircraft
USE **L–29 jet trainer**

Delft camera
GS optical equipment
. cameras
. . **Delft camera**
photographic equipment
. cameras
. . **Delft camera**

delineation
RT boundaries
definition
∞ profiles

delivery
GS **delivery**
. payload delivery (STS)
. **weapons delivery**
RT air drop operations
airdrops
cargo
circulation
hauling
materials handling
output
∞ receiving
transportation
trucks

Delmarva Peninsula (DE–MD–VA)
GS landforms
. peninsulas
. . **Delmarva Peninsula (DE–MD–VA)**
RT Delaware
Maryland
Virginia

Delphi method (forecasting)
GS forecasting
. technological forecasting
. . **Delphi method (forecasting)**
management methods
. **Delphi method (forecasting)**
RT estimating
∞ methodology
operations research
pattern method (forecasting)
planning
predictions
probe method (forecasting)
profile method (forecasting)
technology assessment

Delrin (trademark)
GS plastics
. **Delrin (trademark)**
RT resins

delta antennas
GS antennas
. **delta antennas**
RT antenna design
resonators
transmission lines

Delta Clipper
(added September 1994)
GS launch vehicles
. reusable launch vehicles
. . single stage to orbit vehicles
. . . **Delta Clipper**
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . single stage to orbit vehicles
. . . . **Delta Clipper**
RT aerospace planes
liquid propellant rocket engines
space transportation

Delta Dagger aircraft
USE **F–102 aircraft**

Delta Dart aircraft
USE **F–106 aircraft**

delta function
GS analysis (mathematics)
. real variables
. . **delta function**
functions (mathematics)
. **delta function**

Delta launch vehicle
GS launch vehicles
. **Delta launch vehicle**
RT Anik 1
Anik 2
Anik satellites
Beacon Explorer A
ESSA 1 satellite
ESSA 2 satellite
ESSA 3 satellite
ESSA 4 satellite
ESSA 5 satellite
ESSA 6 satellite
ESSA 7 satellite
ESSA 8 satellite
ESSA 9 satellite
Explorer 10 satellite
Explorer 12 satellite
Explorer 14 satellite
Explorer 15 satellite
Explorer 17 satellite
Explorer 18 satellite
Explorer 21 satellite
Explorer 26 satellite
Explorer 28 satellite
Explorer 29 satellite
Explorer 32 satellite
Explorer 33 satellite
Explorer 38 satellite
Explorer 43 satellite

Explorer 49 satellite
Explorer 55 satellite
International Magnetospheric Explorer
OSO-1
OSO-2
OSO-4
OSO-C
outer planets explorers
Pioneer 6 space probe
Pioneer 7 space probe
RCA Satcom satellites
Space Shuttle upper stage D
SYNCOM 1 satellite
SYNCOM 2 satellite
SYNCOM 3 satellite
TIROS 2 satellite
TIROS 3 satellite
TIROS 4 satellite
TIROS 5 satellite
TIROS 6 satellite
TIROS 7 satellite
TIROS 8 satellite
TIROS 9 satellite
TIROS 10 satellite

delta modulation
GS coding
. signal encoding
. . pulse modulation
. . . pulse code modulation
. . . . **delta modulation**
modulation
. pulse modulation
. . pulse code modulation
. . . **delta modulation**
RT pulse communication

delta wings
DEF Triangularly shaped wings of aircraft. Used for triangular wings.
UF *triangular wings*
GS airfoils
. wings
. . low aspect ratio wings
. . . **delta wings**
. . swept wings
. . . sweptback wings
. . . . **delta wings**
planforms
. wing planforms
. . sweptback wings
. . . **delta wings**
RT arrow wings
AVRO 707 aircraft
caret wings
FD 2 aircraft
GA-5 aircraft
variable sweep wings
VATOL aircraft
waveriders
wing rock

deltas
GS landforms
. **deltas**
. . Mississippi Delta (LA)
. . Rhone Delta (France)
RT alluvium
fans (landforms)
rivers
sands
soils

demagnetization
DEF The reduction of residual magnetism to an acceptable level.
RT magnetic fields
∞ reduction

demand (economics)
GS economics
. **demand (economics)**
RT consumption
supplying

demand assignment multiple access
DEF A technique of assigning communication resources on an "as needed basis" such as in satellite communications. Used for DAMA.
UF *DAMA*
GS telecommunication
. multiple access
. . **demand assignment multiple access**
transmission
. signal transmission
. . data transmission
. . . multiple access
. . . . **demand assignment multiple access**
RT channel capacity
communication networks
communication satellites
satellite networks

demineralizing
GS **demineralizing**
. bone demineralization
RT crystallization
deionization
desalinization
distillation
ion exchanging
osmosis
purification
reverse osmosis
∞ separation
softening
water treatment

Democratic Peoples Republic of Korea
USE **North Korea**

Democratic Republic of Congo
SN (REPLACED THE TERM "ZAIRE" IN 1997. ALL OLDER RECORDS HAVE BEEN UPDATED WITH THE NEW FORM OF THE TERM)
UF *Belgian Congo*
Congo (Kinshasa)
Zaire
GS nations
. **Democratic Republic of Congo**
RT Africa

demodulation
RT amplitude modulation
decoding
demodulators
∞ detectors
frequency modulation
heterodyning
intermodulation
modulation
phase modulation
pulse modulation
remodulation
telecommunication

demodulators
DEF Electronic devices which operate on an input of a modulated carrier to recover the modulating wave as an output.
GS **demodulators**
. frequency compression demodulators
. modems
. phase demodulators
. phase lock demodulators
RT amplitude modulation
decoders
decommutators
demodulation
frequency modulation
matched filters
modulation
modulators
phase modulation
pulse modulation

demography
DEF Statistical study of human populations, especially with reference to size, density, distribution, and vital data.
RT census
communities
∞ density
∞ distribution
human beings
inhabitants
megalopolises
nations
sociology
∞ statistics

demonstration
USE **proving**

demultiplexing
DEF Separation of two or more signals that were previously combined by a compatible multiplexer and transmitted over a single channel.
GS transmission
. **demultiplexing**
RT code division multiplexing
frequency division multiplexing
multiplexing
time division multiplexing
wavelength division multiplexing

denaturation (biopolymers)
USE **biopolymer denaturation**

dendritic crystals
GS crystals
. **dendritic crystals**
RT isotropy
needles
whiskers (crystals)

dendritic drainage
USE **drainage patterns**

dendrochronology
DEF The use of annual growth rings in plant tissue to determine the age of the plant or tree. Used for tree ring dating.
UF *tree ring dating*
RT climatology
geochronology
periodic variations
timberline
trees (plants)

denitrogenation
GS chemical reactions
. **denitrogenation**
RT nitration

Denmark
GS nations
. **Denmark**
RT Danish space program
Europe
Greenland
Scandinavia

dense plasmas
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **dense plasmas**
. . . . . plasma focus
. . . . . strongly coupled plasmas
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **dense plasmas**
. . . . . plasma focus
. . . . . strongly coupled plasmas
RT astrophysics
beta factor
electron scattering
high temperature plasmas
nuclear fusion
particle collisions
plasma compression
spheromaks
stellar structure

densification
GS pressure
. **densification**
RT agglomeration
chemical vapor infiltration
compacting
compressing
consolidation
Ludox (trademark)
pressurizing

densimeters
DEF Instruments for measuring the density or specific gravity of liquids, gases, or solids.
GS measuring instruments
. **densimeters**
. . ultrasonic densimeters
RT density (mass/volume)
density measurement
∞ instruments
∞ measurement

densitometers
DEF Instruments for the measurement of optical density (photographic transmission, photographic reflection, visual transmission, etc.) of a material, generally of a photographic image.
GS measuring instruments
. **densitometers**
. . microdensitometers
RT gamma ray absorptiometry
gravimeters
optical equipment
optical measurement
optical measuring instruments
photometers
photon absorptiometry
transmissometers

∞ **density**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT atmospheric density
atom concentration
biomass
demography
density (mass/volume)
density (number/volume)
flux density
optical density
porosity
Rankine–Hugoniot relation

density (mass/volume)
DEF The mass per unit volume of a material at a specified temperature.
UF *specific gravity*
GS **density (mass/volume)**
. atmospheric density
. **gas density**
. space density
RT absorptance
absorptivity
bulk modulus
buoyancy
compressibility
degenerate matter
densimeters
∞ density
density measurement
hydrometers
internal friction
isopycnic processes
Lewis numbers
opacity
permeability
∞ physical properties
porosity
pycnometers
stopping power
transmissivity
transmittance
transparence
ultrasonic densimeters
viscosity
void ratio
weight measurement

density (number/volume)
GS **density (number/volume)**
. meteoroid concentration
. packing density
. particle density (concentration)
. . electron density (concentration)
. . . carrier density (solid state)
. . . electron density profiles
. . . ionospheric electron density
. . . magnetospheric electron density
. . electron distribution
. . . electron density profiles
. . ion density (concentration)
. . . ionospheric ion density
. . . magnetospheric ion density
. . . . magnetospheric proton density
. . . proton density (concentration)
. . . . magnetospheric proton density
. . plasma density
. space density
RT atmospheric density
∞ density

density (rate/area)
USE **flux density**

density distribution
RT baroclinic waves
Fokker–Planck equation
Maxwell–Boltzmann density function
shock discontinuity
Taylor instability

density measurement
GS **density measurement**
. gamma ray absorptiometry
. photon absorptiometry
. x ray density measurement
RT chemical analysis
densimeters
density (mass/volume)
hydrometers
∞ measurement
mechanical measurement
ultrasonic densimeters
wind tunnel tests

density wave model
GS models
. astronomical models
. . **density wave model**
RT galactic structure
mass distribution
spiral galaxies
wave equations

dental calculi
GS deposits
. calculi
. . **dental calculi**
RT lithiasis
teeth
tooth diseases

dentistry
GS medical science
. **dentistry**
RT medical equipment
oral hygiene
teeth
tooth diseases

deoxidizing
GS chemical reactions
. reduction (chemistry)
. . **deoxidizing**
RT degassing
∞ deoxification
deoxygenation
scavenging

∞ **deoxification**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT deoxidizing
deoxygenation
sterilization effects

deoxygenation
GS degassing
. **deoxygenation**
RT deoxidizing
∞ deoxification
∞ reduction
∞ separation

deoxyribonucleic acid
DEF The molecule that encodes genetic information – a double-stranded moleculeeid together by weak bonds betweeen base pairs of nucleotides. Used for DNA.
UF *DNA*
recombinant DNA
GS acids
. nucleic acids
. . **deoxyribonucleic acid**
biopolymers
. nucleic acids
. . **deoxyribonucleic acid**
organic compounds
. nucleic acids
. . **deoxyribonucleic acid**
RT cloning (biology)

gene expression
genes
thymidine
thymine

dependence
UF *dependency*
GS **dependence**
. spatial dependencies
. temperature dependence
. time dependence
RT group dynamics
sociology

dependency
USE **dependence**

dependent variables
DEF Variables considered as a function of other variables, the latter being called independent.
GS analysis (mathematics)
. **dependent variables**
RT complex variables
independent variables
observability (systems)
parameterization
real variables
∞ variable

depersonalization
RT artificial intelligence
automata theory
automatic control
∞ automation
cybernetics
detachment
disorders
man machine systems
mechanization
personality
personnel

depletion
GS **depletion**
. ozone depletion
RT consumption
depreciation
dissipation
elimination
energy policy
exhaustion
exploitation
life (durability)
losses
∞ reduction
removal
resources
utilization

deployment
RT game theory
logistics
military operations
military technology
∞ operations
personnel
strategy
tactics

depolarization
SN (EXCLUDES CONSIDERATION OF OPTICAL DEPOLARIZATION AND PARTICLE SPIN DISALIGNMENT)
DEF A decrease in the polarization of an electrode at a specified current density. Used for depolarizers.
UF *depolarizers*
RT electrolytic polarization
electrophysiology
polarization (charge separation)
∞ reduction
spike potentials

depolarizers
USE **depolarization**

depolymerization
GS chemical reactions
. **depolymerization**
RT degradation
deterioration
polymerization

deposition
UF *accretion*
GS **deposition**
. anodizing
. electrodeposition
. . electroplating
. electroless deposition
. laser deposition
. . pulsed laser deposition
. vapor deposition
. . metalorganic chemical vapor deposition
. . vacuum deposition
RT accumulations
coagulation
coating
coatings
deposits
electroforming
electron bombardment
forming techniques
fouling
magnetron sputtering
metal coatings
plating
precipitation (chemistry)
sediments
∞ separation
settling
sputtering
thermophoresis

deposits
SN (EXCLUDES BANK MINERAL AND GEOLOGICAL DEPOSITS)
GS **deposits**
. calculi
. . dental calculi
. cryodeposits
RT coatings
corrosion
crude oil
deposition
plating
sediments
sludge

depreciation
RT depletion
deterioration
investments
life (durability)
wear

depressants
GS **depressants**
. central nervous system depressants
RT anesthesiology

∞ **depression**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT detachment
disorders
emotions
∞ hollow
introversion
lethargy
low pressure
neurotic depression
psychotic depression
recession
schizophrenia
tectonics
topography

depressions (topography)
USE **structural basins**

depressurization
USE **pressure reduction**

deprivation
GS **deprivation**
. sensory deprivation
. sleep deprivation
. water deprivation
RT confining
isolation
stress (biology)
stress (physiology)

depth
GS dimensions
. **depth**
RT distance
height
thickness

depth measurement
RT bathymeters
core sampling
distance measuring equipment
echo sounding
∞ measurement
mechanical measurement
sounding

depth perception
USE **space perception**

derivation
RT deduction
∞ induction
∞ origins
parameterization
∞ sources

derivation calculus
USE **differential calculus**

dermatitis
GS diseases
. infectious diseases
. . **dermatitis**
. . . contact dermatitis
RT bacterial diseases
dermatology
fungal diseases
itching
radiation hazards
radiation sickness
skin (anatomy)

dermatology
GS medical science
. **dermatology**
RT contact dermatitis
dermatitis
skin (anatomy)

desalinization
RT demineralizing

distillation
osmosis
purification
reverse osmosis
salinity
vaporizing
water treatment

desaturation
RT drying
∞ saturation

descaling
RT chemical cleaning
cleaning
metal finishing
pickling (metallurgy)
scale (corrosion)
∞ separation
shot peening

descent
GS **descent**
. parachute descent
RT approach
ascent
flight paths
gliding
reentry
uncontrolled reentry (spacecraft)

descent propulsion systems
GS propulsion
. **descent propulsion systems**
propulsion system configurations
. **descent propulsion systems**
RT spacecraft propulsion
∞ systems

descent trajectories
GS trajectories
. **descent trajectories**
. . reentry trajectories
RT ascent trajectories
atmospheric entry
ballistic trajectories
coasting flight
falling
flight mechanics
manned reentry
midcourse trajectories
missile trajectories
parabolic flight
reentry
reentry guidance
spacecraft trajectories
terminal guidance

descriptions
RT characterization
definition
nomenclatures
representations

descriptive geometry
GS geometry
. Euclidean geometry
. . **descriptive geometry**
RT analytic geometry
engineering drawings
layouts
∞ projection
projective geometry
toruses

desensitizing
RT corrosion prevention
protective coatings
rusting

desert adaptation
GS adaptation
. **desert adaptation**
RT survival

desertification
DEF The formation of a desert or the gradual expansion of a desertline into previously usable land, due to man-made or natural causes.
RT arid lands
barren land
Death Valley (CA)
desertline
deserts
drought
Earth environment
Gobi desert
land
land use
man environment interactions
Mojave Desert (CA)
oases
remote sensing
Sahara Desert (Africa)
steppes
wadis

desertline
RT arid lands
climatology
desertification
land
topography

deserts
GS land
. **deserts**
. . Gobi desert
. . Libyan desert
. . Mojave Desert (CA)
. . Sahara Desert (Africa)
RT arid lands
barren land
climatology
Coachella Valley (CA)
Death Valley (CA)
desertification
dunes
Earth resources
Imperial Valley (CA)
Kalahari Basin (Africa)
oases
Palo Verde Valley (CA)
playas
remote regions
Salton Sea (CA)
topography
wilderness

desiccants
DEF Chemicals used to absorb moisture.
RT absorbents
adsorbents

desiccation
USE **drying**

desiccators
GS separators
. drying apparatus
. . **desiccators**

∞ **design**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *tailoring*
RT aerodynamic configurations
aircraft design
amplifier design
antenna design
computer aided design
computer design
computer systems design
construction
control systems design
design analysis
design to cost
dimensions
drafting machines
engine design
engineering drawings
equipment specifications
estimating
experiment design
factorial design
functional design specifications
helicopter design
IPAD
layouts
lens design
logic design
missile design
nozzle design
optimization
planning
plant design
pressure vessel design
product development
reactor design
reliability
research
research and development
rocket engine design
satellite design
spacecraft design
structural design
structural design criteria
∞ synthesis
systems engineering

design analysis
RT ∞ analyzing
control systems design
∞ design
logic design
maintainability
multidisciplinary design optimization
optimization
reliability
reliability analysis
reverse engineering
safety factors
value engineering

design of experiments
USE **experiment design**

design to cost
DEF A process whereby cost factors are determined and calculated for the life cycle of a product as an integral part of its design.
RT concurrent engineering
cost analysis
costs
∞ design
life cycle costs
production costs

desorption
DEF The process of removing sorbed gas.
RT ∞ absorption
adsorption
degassing
evolution (liberation)
outgassing

permeating
∞ separation
sublimation

despinning
USE **spin reduction**

destabilization
RT spin reduction
tumbling motion

Destroyer aircraft
USE **B-66 aircraft**

destruction
RT aborted missions
accidents
breaking
cracking (fracturing)
damage
destructive tests
failure
fatigue (materials)
flight hazards
flight safety
lethality
spacecraft breakup
stresses

destructive tests
GS **destructive tests**
. burst tests
RT bend tests
compression tests
corrosion tests
destruction
drop tests
fatigue tests
impact tests
load tests
∞ materials tests
nondestructive tests
tensile tests
∞ tests
vibration tests
wear tests

desulfurizing
GS chemical reactions
. **desulfurizing**
RT flue gases
refining
roasting

desynchronization (biology)
DEF The loss of synchronization between two or more rhythms so that they show independent periods.
GS biological effects
. **desynchronization (biology)**
disorientation
. **desynchronization (biology)**
psychological effects
. **desynchronization (biology)**
RT jet lag
physiological responses
rhythm (biology)

desynchronized sleep
USE **rapid eye movement state**

detachment
DEF A particular state of isolation in which man is separated or detached from his accustomed behavioral environment by inordinate physical and psychological distances. This condition may compromise his performance.
RT anxiety
boredom
depersonalization
∞ depression
disorders
disorientation
emotional factors
human behavior
∞ inhibition
introversion
lethargy
psychology
psychoses

detection
UF *sensing*
GS **detection**
. aircraft detection
. change detection
. edge detection
. explosives detection
. fault detection
. forest fire detection
. haze detection
. high altitude nuclear detection
. missile detection
. radar detection
. remote sensing
. signal detection
. . correlation detection
. asteroid detection
. target recognition
. ultrasonic flaw detection
RT acquisition
data acquisition
∞ detectors
early warning systems
examination
exploration
gas detectors
identifying
inspection
marking
∞ measurement
missile signatures
observation
position (location)
radar signatures
signature analysis
signatures
sound localization
sound ranging
space observations (from Earth)
surveillance
target acquisition
targets
tracking (position)
warning
warning systems

∞ **detectors**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Sensors or instruments employing a sensor.
RT aircraft detection
analyzers
autodynes
character recognition
correlation detection
demodulation
detection
display devices
FLIR detectors
forest fire detection
gas detectors
hazards
helmet mounted displays
indicating instruments
infrared detectors
instrument receivers
laser target designators
life detectors
measuring instruments
mine detectors
monitors
multispectral linear arrays
phase detectors
radiation detectors
radiation measuring instruments
readers
receivers
remote sensors
safety
signal detection
signal detectors
squid (detectors)
telecommunication
transducers
ultrasonic flaw detection
ultraviolet detectors
Venturi tubes
warning
warning systems

detergents
RT ethylenediaminetetraacetic acids
lubricating oils
soaps
surfactants

deterioration
RT atrophy
biodegradability
biodegradation
corrosion
damage
decay
decomposition
degeneration
degradation
depolymerization
depreciation
disintegration
durability
erosion
erosive burning
failure
hot corrosion
rusting
soil erosion
system failures
wear
wear resistance
weathering

determinants
GS algebra
. **determinants**
RT linear equations
matrices (mathematics)

determination
USE **measurement**

detonable gas mixtures
GS gases
. gas mixtures
. . **detonable gas mixtures**
mixtures
. solutions
. . gas mixtures
. . . **detonable gas mixtures**
RT chemical explosions
firing (igniting)
flammability

flammable gases
gas explosions
gas-gas interactions
oxyacetylene
reacting flow

detonation
DEF A rapid chemical reaction which propagates at a supersonic velocity. Used for Chapman-Jouget flame.
UF *Chapman-Jouget flame*
RT chemical explosions
combustion
∞ discharge
explosions
firing (igniting)
flame propagation
initiation
percussion
primers (explosives)
propellant explosions
pulsejet engines
rocket firing
shock waves

detonation waves
DEF Shock waves that accompany detonation and have a shock front followed by a region of decreasing pressure in which the reaction occurs.
GS **elastic waves**
. shock waves
. . **detonation waves**
RT combustible flow
flame propagation
gas explosions
ram accelerators
seismic waves
sound waves
∞ waves

detonators
GS explosive devices
. initiators (explosives)
. . **detonators**
igniters
. initiators (explosives)
. . **detonators**
RT caps (explosives)
exploding wires
explosives
fulminates
fuses (ordnance)
primers (explosives)
sodium azides

deuterides
GS hydrogen compounds
. deuterium compounds
. . **deuterides**
RT hydrides

deuterium
DEF A heavy isotope of hydrogen having one proton and one neutron in the nucleus. Used for hydrogen 2.
UF *hydrogen 2*
GS chemical elements
. hydrogen
. . hydrogen isotopes
. . . **deuterium**
. nuclides
. . isotopes
. . . hydrogen isotopes
. . . . **deuterium**
gases
. hydrogen
. . hydrogen isotopes
. . . **deuterium**
RT heavy water
hydrogen fuels
hydrogen plasma
nuclear fuels

deuterium compounds
GS hydrogen compounds
. **deuterium compounds**
. . deuterides
. . deuterium fluorides
. . heavy water
RT ∞ chemical compounds

deuterium fluoride lasers
USE **DF lasers**

deuterium fluorides
DEF Fluorides of deuterium, a heavy isotope of hydrogen. Used for DF.
UF *DF*
GS halogen compounds
. fluorine compounds
. . fluorides
. . . **deuterium fluorides**
. halides
. . fluorides
. . . **deuterium fluorides**
hydrogen compounds
. deuterium compounds
. . **deuterium fluorides**
RT DF lasers

deuterium oxides
USE **heavy water**

deuterium plasma
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . hydrogen plasma
. . . . . **deuterium plasma**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . hydrogen plasma
. . . . . **deuterium plasma**
RT deuterons
hydrogen

deuteron irradiation
GS irradiation
. ion irradiation
. . **deuteron irradiation**
RT alpha particles
charged particles
nuclear fusion
particles
plasmas (physics)
proton irradiation

deuterons
DEF The nuclei of deuterium atoms.
GS ions
. **deuterons**
particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **deuterons**
. corpuscular radiation
. . energetic particles
. . . nuclei (nuclear physics)
. . . **deuterons**
. elementary particles
. . **deuterons**
RT alpha particles
cosmic rays
deuterium plasma
photomagnetic effects
plasmas (physics)
Pomeranchuk theorem
protons

developers (photography)
USE **photographic developers**

developing nations
RT Caribbean region
economic development
economic factors
nations
United Nations

∞ **development**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT energy policy
evolution (development)
exploitation
growth
land use
management planning
missile design
personnel development
photographic developers
product development
rural land use
Starsite program
training analysis
urban development

deviation
DEF The variation from a specified dimension or design requirement, usually defining upper and lower limits.
RT aberration
abnormalities
asymmetry
∞ dispersion
distortion
divergence
∞ drift
eccentricity
heterogeneity
irregularities
nonsynchronization
variations

∞ **devices**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT air bag restraint devices
alpha plasma devices
antiskid devices
bulk acoustic wave devices
chips (memory devices)
cyclotron resonance devices
error correcting devices
explosive devices
lift devices
lifting bodies
mechanical devices
nanostructures (devices)
NDM semiconductor devices
nuclear devices
photoelectrochemical devices
plasma display devices
positioning devices (machinery)
safety devices
self erecting devices
self repairing devices
solid state devices
surface acoustic wave devices

training devices
TRAPATT devices

devitrification
USE **crystallization**

dew
RT acid rain
frost
hydrometeors
precipitation (meteorology)
water vapor

dew point
DEF Temperature at which water vapor begins to condense.
RT atmospheric moisture
condensing
hygrometers
saturation (chemistry)

Dewar systems
USE **cryogenic equipment**

dewatering
DEF Removal of water by draining, pumping, or other means.
RT dehydration
drying
pollution control
waste disposal
water reclamation

dewaxing
RT decontamination
refining

dewetting
USE **drying**

dextrans
GS organic compounds
. carbohydrates
. . polysaccharides
. . . **dextrans**
. . sugars
. . . **dextrans**

DF
USE **deuterium fluorides**

DF lasers
DEF Gas lasers in which the active material is deuterium fluoride. Used for deuterium fluoride lasers.
UF *deuterium fluoride lasers*
GS stimulated emission devices
. lasers
. . gas lasers
. . . **DF lasers**
RT deuterium fluorides

DH 106 aircraft
USE **Comet 4 aircraft**

DH 112 aircraft
UF *de Havilland DH 112 aircraft*
de Havilland Venom aircraft
Venom aircraft
GS attack aircraft
. fighter aircraft
. . **DH 112 aircraft**
de Havilland aircraft
. **DH 112 aircraft**
Hawker Siddeley aircraft
. **DH 112 aircraft**
jet aircraft
. **DH 112 aircraft**
monoplanes
. **DH 112 aircraft**
RT∞ aircraft

DH 115 aircraft
UF *de Havilland DH 115 aircraft*
Vampire aircraft
GS attack aircraft
. **DH 115 aircraft**
de Havilland aircraft
. **DH 115 aircraft**
Hawker Siddeley aircraft
. **DH 115 aircraft**
jet aircraft
. **DH 115 aircraft**
monoplanes
. **DH 115 aircraft**
RT∞ aircraft

DH 121 aircraft
UF *de Havilland DH 121 aircraft*
Trident aircraft
GS commercial aircraft
. **DH 121 aircraft**
de Havilland aircraft
. **DH 121 aircraft**
Hawker Siddeley aircraft
. **DH 121 aircraft**
jet aircraft
. turbofan aircraft
. . **DH 121 aircraft**
monoplanes
. **DH 121 aircraft**
passenger aircraft
. **DH 121 aircraft**
transport aircraft
. **DH 121 aircraft**
RT∞ aircraft

DH 125 aircraft
UF *de Havilland DH 125 aircraft*
HS-125 aircraft
Jet Dragon aircraft
GS de Havilland aircraft
. **DH 125 aircraft**
general aviation aircraft
. **DH 125 aircraft**
Hawker Siddeley aircraft
. **DH 125 aircraft**
jet aircraft
. **DH 125 aircraft**
light aircraft
. **DH 125 aircraft**
monoplanes
. **DH 125 aircraft**
passenger aircraft
. **DH 125 aircraft**
transport aircraft
. **DH 125 aircraft**
RT∞ aircraft

DHC 2 aircraft
DEF De Havilland Canada STOL utility aircraft. Used for DHC Beaver aircraft.
UF *DHC Beaver aircraft*
GS de Havilland aircraft
. **DHC 2 aircraft**
general aviation aircraft
. **DHC 2 aircraft**
jet aircraft
. **DHC 2 aircraft**
monoplanes
. **DHC 2 aircraft**
transport aircraft
. **DHC 2 aircraft**
RT∞ aircraft

DHC 4 aircraft
UF *AC-1 aircraft*
Caribou aircraft
CV-2 aircraft
de Havilland DHC 4 aircraft
GS de Havilland aircraft
. **DHC 4 aircraft**
monoplanes
. **DHC 4 aircraft**
transport aircraft
. **DHC 4 aircraft**
utility aircraft
. **DHC 4 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **DHC 4 aircraft**
RT∞ aircraft

DHC 5 aircraft
UF *Buffalo aircraft*
CV-7 aircraft
de Havilland DHC 5 aircraft
GS de Havilland aircraft
. **DHC 5 aircraft**
jet aircraft
. turboprop aircraft
. . **DHC 5 aircraft**
monoplanes
. **DHC 5 aircraft**
transport aircraft
. **DHC 5 aircraft**
utility aircraft
. **DHC 5 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **DHC 5 aircraft**
RT∞ aircraft

DHC Beaver aircraft
USE **DHC 2 aircraft**

diabetes mellitus
GS diseases
. **diabetes mellitus**
RT carbohydrate metabolism
enzyme activity
insulin
pancreas
urinalysis

Diademe satellites
GS artificial satellites
. **Diademe satellites**

diagnosis
RT∞ analyzing
anesthesiology
behavior
clinical medicine
diseases
examination
injuries
medical equipment
medical science
pathology
prognosis
psychology
psychometrics
telemedicine
veterinary medicine

diagrams
GS **diagrams**
. bending diagrams
. block diagrams
. circuit diagrams
. color-color diagram
. color-magnitude diagram
. creep diagrams
. Feynman diagrams

. Hertzsprung–Russell diagram
. Moller diagram
. Nyquist diagram
. phase diagrams
. S–N diagrams
. stress–strain diagrams
. taphigrams
. Venn diagrams
RT charts
drawings
geometry
graphic arts
visual aids

DIAL (lidar)
USE **differential absorption lidar**

DIAL satellite
GS **artificial satellites**
. scientific satellites
. . **DIAL satellite**
RT aeronomy
astronomical photometry
European space programs
satellite-borne instruments

diallyl compounds
RT allyl compounds
∞ chemical compounds

dials
UF *pointers*
RT display devices
indicating instruments

dialysis
GS **dialysis**
. electrodialysis
RT diaphragms (mechanics)
diffusion
extraction
permeating
∞ separation

diamagnetism
UF *Meissner effect*
GS magnetic properties
. **diamagnetism**
RT Curie temperature
cyclotron resonance
electrical properties
ferromagnetism
paramagnetism

Diamant launch vehicle
GS launch vehicles
. **Diamant launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . **Diamant launch vehicle**
RT liquid propellant rocket engines
solid propellant rocket engines

diameters
DEF Lengths of the longest straight lines through the centers of the largest cross sections.
GS dimensions
. **diameters**
RT circumferences
geometry
radii
thickness

diamines
GS amines
. **diamines**
. . ethylenediamine
. . guanidines
. . . guanethidine
. . . triaminoguanidinium azide

diamond films
(added November 1991)
GS thin films
. **diamond films**
RT amorphous silicon
coatings
diamonds
metal films
semiconducting films
space processing
vacuum deposition
vapor deposition

diamond wings
USE **low aspect ratio wings**
swept wings

diamonds
DEF (A) An isometric mineral, representing a naturally occurring crystalline form of carbon dimorphous with graphiteand being the hardest natural substance known. (B) Artificially produced crystallized carbon similar to the native form. (C) A crystalline mineral that resembles diamonds in brilliance.
GS **diamonds**
. meteoritic diamonds
RT abrasives
carbon
diamond films
single crystals

diaphragm (anatomy)
DEF Musculomembranous partition separating the abdominal and thoracic cavities.
GS anatomy
. musculoskeletal system
. . muscles
. . . **diaphragm (anatomy)**
. respiratory system
. . **diaphragm (anatomy)**
RT ∞ diaphragms
thorax

∞ **diaphragms**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT diaphragm (anatomy)
diaphragms (mechanics)
electrolytic cells
membranes

diaphragms (mechanics)
SN (NON-ANATOMICAL)
UF *bladders (mechanics)*
GS **diaphragms (mechanics)**
. expulsion bladders
RT catholytes
dialysis
∞ diaphragms
electrolytic cells
membrane structures
membranes
optical filters
osmosis
thin plates
thin walls
webs (sheets)
webs (supports)

diastole
GS heart function
. **diastole**
RT blood circulation
blood flow
blood pressure
cardiovascular system
diastolic pressure
heart
heart rate
systole

diastolic pressure
GS pressure
. blood pressure
. . **diastolic pressure**
RT cardiac ventricles
diastole

diatomic gases
GS gases
. molecular gases
. . polyatomic gases
. . . **diatomic gases**

diatomic molecules
GS molecules
. polyatomic molecules
. . **diatomic molecules**
RT low molecular weights
methylidyne
Morse potential
triatomic molecules

diatoms (unicellular plants)
USE **algae**

DIB
USE **diffuse interstellar bands**

dibasic compounds
RT ∞ chemical compounds
monomers

diborane
GS boron compounds
. **diborane**
hydrogen compounds
. hydrides
. . **diborane**

dibromides
GS halogen compounds
. bromine compounds
. . bromides
. . . **dibromides**
. halides
. . bromides
. . . **dibromides**

dibutyl compounds
GS alkyl compounds
. **dibutyl compounds**
RT ∞ chemical compounds
tetrabutyls

dicarboxylic acids
GS acids
. carboxylic acids
. . **dicarboxylic acids**
organic compounds
. carboxylic acids
. . **dicarboxylic acids**
RT terephthalate

dichlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . **dichlorides**
. halides
. . chlorides
. . . **dichlorides**

dichlorodiphenyltrichloroethane
USE **DDT**

dichotomies
GS classifications
. hierarchies
. . **dichotomies**

dichroism
GS electromagnetic properties
. optical properties
. . **dichroism**
RT color
isochromatics
light (visible radiation)
photoelasticity

dichromates
USE **chromates**

Dicke radiometers
UF *Dicke type radiometers*
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . **Dicke radiometers**
RT bolometers
thermopiles

Dicke type radiometers
USE **Dicke radiometers**

dictionaries
UF *glossaries*
GS documents
. **dictionaries**
RT abbreviations
coding
decoding
definition
nomenclatures
space glossaries
terminology

didymium
DEF A mixture of rare earth elements that is freed from cerium. It was once regarded as an element but contains chiefly neodymium and praseodymium and is usually associated with lanthanum. It is used in coloring glass for optical filters.
RT lanthanum
neodymium
optical filters
praseodymium

dieldrin
GS poisons
. pesticides
. . insecticides
. . . **dieldrin**

dielectric constant
USE **permittivity**

dielectric materials
USE **dielectrics**

dielectric permeability
GS permeability
. **dielectric permeability**
RT magnetic permeability

dielectric polarization
GS polarization (charge separation)
. **dielectric polarization**
RT dielectrics
electrets
electric fields

dielectric properties
GS electrical properties
. **dielectric properties**
. . permittivity
RT antiferroelectricity
capacitance
ferroelectricity
∞ properties
Sommerfeld waves

dielectrics
DEF Substances that contain few or no free charges and which can support electrostatic stresses. Used for dielectric materials.
UF *dielectric materials*
GS **dielectrics**
. lossless materials
. radome materials
RT barium titanates
capacitance switches
capacitive fuel gages
capacitors
ceramics
dielectric polarization
electrets
electric conductors
electrical insulation
electromagnetic surface waves
field mode theory
∞ insulated structures
insulators
magnetoelectric media
screen effect
spark gaps
sulfur hexafluoride

dielectronic satellite lines
USE **resonance lines**

Diels-Alder reactions
GS chemical reactions
. **Diels-Alder reactions**
RT organic chemistry

diencephalon
GS anatomy
. nervous system
. . central nervous system
. . . brain
. . . . **diencephalon**
. . . . . hypothalamus
. . . . . pineal gland
. . . . . thalamus
RT embryology

dienes
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . **dienes**
. . . . butadiene
. . . . heptadiene
. . . . hexadiene
. . . . polybutadiene

dies
RT casting
coining
cutters
extruding
injection molding
machine tools
molds
pultrusion
punches
rheocasting
stamping

diesel engines
GS engines
. internal combustion engines
. . **diesel engines**
. piston engines
. . **diesel engines**
RT locomotives

diesel fuels
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . **diesel fuels**
. . liquid fuels
. . . **diesel fuels**
products
. petroleum products
. . **diesel fuels**
RT automobile fuels
gasoline
internal combustion engines
kerosene

diethyl compounds
(added July 1992)
GS organic compounds
. **diethyl compounds**
. . diethyl ether
. . diethyl hydrogen phosphite (DEHP)
RT ethyl compounds
triethyl compounds

diethyl ether
GS ethers
. **diethyl ether**
organic compounds
. diethyl compounds
. . **diethyl ether**

diethyl hydrogen phosphite (DEHP)
UF *DEHP*
GS organic compounds
. diethyl compounds
. . **diethyl hydrogen phosphite (DEHP)**
phosphorus compounds
. **diethyl hydrogen phosphite (DEHP)**
RT ethyl compounds

diets
RT caloric requirements
fasting
∞ food
nutrition
space flight feeding

difference equations
GS analysis (mathematics)
. numerical analysis
. . **difference equations**
RT approximation
differences
differential equations
∞ equations
finite difference theory
linear evolution equations
nonlinear evolution equations
numerical stability

differences
RT difference equations
divergence
finite difference theory
gradients
variations

differential absorption lidar
(added September 1992)
UF *DIAL (lidar)*
GS radar

. optical radar
. . **differential absorption lidar**
RT absorption spectra
atmospheric sounding
backscattering
radar measurement
remote sensing

differential algebra
USE **differential calculus**
matrices (mathematics)

differential amplifiers
GS amplifiers
. **differential amplifiers**
RT analog computers
error signals
operational amplifiers
transistor amplifiers

differential analyzers
DEF Analog computers designed and used primarily for solving differential equations.
RT algorithms
analog computers
computerized simulation
differential equations
digital computers
digital integrators

differential calculus
UF *derivation calculus*
differential algebra
GS analysis (mathematics)
. calculus
. . **differential calculus**
RT ∞ differentiation
differentiators
integral calculus
limits (mathematics)
minima
numerical differentiation
optimization
real variables

differential equations
UF *differential operators*
integrodifferential equations
GS analysis (mathematics)
. real variables
. . **differential equations**
. . . Blasius equation
. . . Chandrasekhar equation
. . . cosine series
. . . Duffing differential equation
. . . Falkner–Skan equation
. . . hyperbolic differential equations
. . . Lame wave equations
. . . partial differential equations
. . . . biharmonic equations
. . . . Burger equation
. . . . Cauchy–Riemann equations
. . . . elliptic differential equations
. . . . . Monge–Ampere equation
. . . . Euler–Cauchy equations
. . . . Fokker–Planck equation
. . . . Gauss equation
. . . . Helmholtz vorticity equation
. . . . Liouville equations
. . . . parabolic differential equations
. . . . Poisson equation
. . . . vlasov equations
. . . Riocati equation
. . . vorticity equations
. . . . Helmholtz vorticity equation
RT Airy function
alternating direction implicit methods
asymptotic properties
backward differencing
Bessel functions
Blasius equation
bond graphs
boundary layer equations
boundary value problems
calculus
calculus of variations
Cauchy problem
Crank–Nicholson method
difference equations
differential analyzers
Dirichlet problem
distributed parameter systems
∞ equations
Floquet theorem
Fourier analysis
Fourier–Bessel transformations
functional integration
Green's functions
half planes
Hankel functions
Hill determinant
ill–conditioned problems (mathematics)
ill–posed problems (mathematics)
integral equations
integrals
Lagrange multipliers
Lame functions
Laplace transformation
Liapunov functions
linear equations
linearity
Lipschitz condition
Mathieu function
maximum principle
Milne method
Neumann problem
nonlinear equations
nonlinearity
numerical analysis
numerical differentiation
numerical integration
numerical stability
operational calculus
Pfaff equation
potential theory
predictor–corrector methods
Riemann waves
Riesz theorem
Schauder fixpoint theorem
Schmidt method
spectral methods
stability derivatives
Sturm–Liouville theory
vector analysis
Whittaker functions

differential geometry
UF *nonEuclidian geometry*
GS geometry
. **differential geometry**
. . lie groups
. . . spinor groups
. . Riemann manifold
. . tensor analysis
RT analytic geometry
∞ analyzing
curvature
curves (geometry)
invariant imbeddings
lofting
relativity

differential interferometry
GS interferometry
. **differential interferometry**
RT flow visualization
holography
Schlieren photography

differential operators
USE **differential equations**
operators (mathematics)

differential pressure
GS pressure
. **differential pressure**
RT pressure distribution
pressure gradients
pressure measurement

differential pulse code modulation
DEF An efficient signal encoding method of reducing the transmission rate of digital signals. The basic principle of DPCM is to quantize code and transmit the difference between the actual sample and prediction value. Used for DPCM (modulation).
UF *DPCM (modulation)*
GS coding
. signal encoding
. . pulse modulation
. . . pulse code modulation
. . . . **differential pulse code modulation**
modulation
. pulse modulation
. . pulse code modulation
. . . **differential pulse code modulation**
RT bitemary code
decommutators
linear prediction
P.A.C.M. telemetry
PCM telemetry
pulse communication
pulse frequency modulation
telemetry
unified S band

differential thermal analysis
USE **thermal analysis**

∞ **differentiation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT TERMS LISTED BELOW)
RT anatomy
cytogenesis
differential calculus
differentiation (biology)
discrimination

differentiation (biology)
GS cytogenesis
. **differentiation (biology)**
RT anatomy
biological diversity
∞ biology
∞ differentiation
embryology
morphology
physiology

differentiators
DEF In computer operations, devices whose output is proportional to the derivative of an input signal. In electronics, a transducer whose output waveform is the time derivative of its input waveform.
RT circuits
differential calculus
integrators

diffraction
DEF The process by which the direction of radiation is changed so that it spreads into the geometric shadow region of an opaque or refractive object that lies in a radiation field. Used for interference monochromatization and Kirchhoff–Huygens principle.
UF *interference monochromatization*
Kirchhoff–Huygens principle
GS **diffraction**
. electron diffraction
. Fresnel diffraction
. neutron diffraction
. pulse diffraction
. wave diffraction
. x ray diffraction
RT atmospheric scattering
attenuation
Bragg angle
caustics (optics)
crystal optics
Debye–Scherrer method
deflection
diffractometers
echelette gratings
echelle gratings
electromagnetic radiation
geometrical theory of diffraction
Huygens principle
isochromatics
Laue method
Moire effects
mosaics
optical properties
ray tracing
refraction
transmission
wave dispersion
wave propagation

diffraction gratings
USE **gratings (spectra)**

diffraction limited cameras
GS optical equipment
. cameras
. . **diffraction limited cameras**
photographic equipment
. cameras
. . **diffraction limited cameras**
RT astronomical photography
spaceborne photography
spaceborne telescopes

diffraction optics
USE **diffractive optics**

diffraction paths
RT Bragg angle
electron trajectories
holographic optical elements
multipath transmission
optical paths
∞ paths
spherical waves

diffraction patterns
UF *fringe patterns*
GS distribution (property)
. radiation distribution
. . **diffraction patterns**
. . . Kossel pattern
. . . rainbows
RT diffractometers
Fresnel integrals
Fresnel region
fringe multiplication
geometrical theory of diffraction
holographic interferometry
interferometry
Moire fringes
Moire interferometry
null zones
∞ optics
∞ patterns
phase contrast
Pomeranchuk theorem
signal fading
speckle holography
speckle interferometry
speckle patterns
underwater optics
very long base interferometry

diffraction propagation
DEF Wave propagation around objects, or over the horizon, by diffraction.
GS transmission
. wave propagation
. . **diffraction propagation**
RT diffraction radiation
geometrical optics
∞ optics
∞ propagation
spherical waves
underwater optics

diffraction radiation
DEF Electromagnetic radiation excited by an electron flux passing near a diffractive, periodic structure, such as a wiggler magnet in a free electron laser.
GS electromagnetic radiation
. **diffraction radiation**
RT bremsstrahlung
cyclotron resonance devices
diffraction propagation
electron beams
electron diffraction
free electron lasers
gratings (spectra)
laser outputs
light emission
maser outputs
masers
microwave emission
microwave oscillators
microwave tubes
microwaves
nonuniform magnetic fields
particle motion
relativistic electron beams
stimulated emission devices
transferred electron devices
tunable lasers
wave diffraction
wave excitation
wiggler magnets

diffraction telescopes
USE **spectroscopic telescopes**

diffractive optics
(added July 1995)
DEF Optical elements that add up scattered light from a multiple of disturbances in amplitude or phase to generate a transformed wavefront.
UF *diffraction optics*
RT display devices
holography
∞ optics
photopolymers

diffractometers
GS measuring instruments
. optical measuring instruments
. . **diffractometers**
optical equipment
. optical measuring instruments
. . **diffractometers**
RT chemical analysis
diffraction
diffraction patterns
etalons
goniometers
interferometers
Mach–Zehnder interferometers
optical measurement
photogoniometers
spectrometers
wave front reconstruction

diffuse interstellar bands
(added February 1997)
UF *DIB*
GS spectra
. spectral bands
. . **diffuse interstellar bands**
RT interstellar chemistry
interstellar extinction
interstellar matter
molecular clouds
polycyclic aromatic hydrocarbons

diffuse radiation
DEF Radiant energy propagating in many different directions through a given small volume of space; to be contrasted with parallel radiation. Used for lunar scattering.
UF *lunar scattering*
RT heat transfer
light scattering
point sources
∞ radiation
specular reflection

∞ **diffusers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Specially designed ducts, chambers, or sections, sometimes equipped with guide vanes, that decrease the velocity of a fluid, as air, and increases its pressure, as in jet engines, wind tunnels, etc. Used for shock diffusers.
UF *shock diffusers*
RT air conditioning
air conditioning equipment
attenuators
baffles
boundary layer separation
ceilings (architecture)
chokes
conical flow
deflectors
diffusion
diverters
engine inlets
exhaust diffusers
hypersonic inlets
∞ illumination
inlet flow
inlet nozzles
louvers
mixers
mufflers
∞ nozzles
porous walls
pressure recovery
separators
sprayers
supersonic diffusers
vaneless diffusers
ventilators

diffusion
DEF In an atmosphere, or in any gaseous system, the exchange of fluid parcels between regions, in apparently random motions of a scale too small to be treated by the equations of motion. In materials, the movement of atoms of one material into the crystal lattice of an adjoining material, e.g., penetration of the atoms in a ceramic coating into the lattice of the protected metal. In ion engines, the migration of neutral atoms through a porous structure incident to ionization at the emitting surface. Used for diffusion effect and perfusion.
UF *diffusion effect*
perfusion
GS **diffusion**
. ambipolar diffusion
. atmospheric diffusion
. gaseous diffusion
. . gaseous self-diffusion
. magnetic diffusion
. molecular diffusion
. particle diffusion
. . electron diffusion
. . ionic diffusion
. plasma diffusion
. self diffusion (solid state)
. self propagation
. species diffusion
. surface diffusion
. thermal diffusion
. turbulent diffusion
RT ∞ absorption
adsorption
air pollution
atmospheric scattering
chemical engineering
circulation
convection–diffusion equation
dehumidification
dialysis
∞ diffusers
diffusion length
diffusivity
dilution
dispersing
∞ dispersion
dissipation
dissolving
distillation
drying
∞ effects
Einstein equations
∞ equilibrium
evaporation
extraction
Ficks equation
gas–metal interactions
kinetic theory
mixing
nonpoint sources
osmosis
penetration
percolation
permeability
permeating
∞ propagation
radial flow
reflection
scattering
self absorption
∞ separation
sound propagation
sound waves
spraying
spreading
sublimation
surface properties
thermophoresis
transport properties

diffusion bonding
USE **diffusion welding**

diffusion coefficient
DEF The absolute value of the ratio of the molecular flux per unit area to the concentration gradient of a gas diffusing through a gas or a porous medium where the molecular flux is evaluated across a surface perpendicular to the direction of the concentration gradient.
GS coefficients
. **diffusion coefficient**
. . Soret coefficient
transport properties
. **diffusion coefficient**
. . Soret coefficient
RT attenuation coefficients
convection–diffusion equation
∞ equilibrium
Ficks equation
gaseous diffusion
Lewis numbers
mass flow rate
molecular diffusion
particle diffusion
reaction–diffusion equations

diffusion effect
USE **diffusion**

diffusion electrodes
GS electrodes
. **diffusion electrodes**
RT electrolytic cells
semiconductor devices

diffusion flames
GS flames
. **diffusion flames**
RT boundary layer combustion
combustion
Damkohler number

diffusion length
GS dimensions
. length
. . **diffusion length**
distance
. **diffusion length**
RT carrier transport (solid state)
diffusion
electron diffusion
minority carriers
particle diffusion
semiconductor devices
solar cells

diffusion pumps
GS pumps
. **diffusion pumps**
RT vacuum apparatus
vacuum pumps

diffusion theory
RT Einstein equations
Fokker–Planck equation
Jacobi integral
kinetic theory
Kirkendall effect
Monte Carlo method
∞ theories
transport theory

diffusion waves
RT elastic waves
electron diffusion
electrostatic waves
ionic diffusion
kinetic theory
molecular diffusion
plasma diffusion
plasma waves

diffusion welding
UF *diffusion bonding*
GS welding
. pressure welding
. . **diffusion welding**
RT bonding
burners
Kirkendall effect
metal bonding
metal–metal bonding

diffusion–convection equation
USE **convection–diffusion equation**

diffusivity
DEF A measure of the rate of diffusion of a substance, expressed as the diffusivity coefficient K.
RT diffusion
fluid mechanics
impedance
Kirkendall effect
mobility
NDM semiconductor devices
permeability
∞ physical properties
∞ resistance
solubility
thermodynamic properties

difluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . **difluorides**
. . . . calcium fluorides
. . . . . fluorspar
. halides
. . fluorides
. . . **difluorides**
. . . . calcium fluorides
. . . . . fluorspar

difluoro compounds
GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . **difluoro compounds**
. . . . perfluoroalkane
. . . . polytetrafluoroethylene
. . . . . teflon (trademark)
RT ∞ chemical compounds

difluoroureas
GS amines
. **difluoroureas**
nitrogen compounds
. amides
. . ureas
. . . **difluoroureas**

digesting
RT eating
enzymology
∞ food
lysine
mastication
physiology

softening

digestive system
GS anatomy
. **digestive system**
. . esophagus
. . gastrointestinal system
. . . appendix (anatomy)
. . . intestines
. . . . rectum
. . . stomach
. . mouth
. . . lips (anatomy)
. . pancreas
. . salivary glands
. . teeth
. . tongue
RT abdomen
enzyme activity
enzymology
gall
organs
saliva
∞ systems

digital circuits
USE **digital electronics**

digital command systems
RT numerical control
remote control
servocontrol
∞ systems

digital communication
USE **pulse communication**

digital computers
DEF Computers which operate with information, numerical or otherwise, represented in a digital form.
GS data processing equipment
. computers
. . **digital computers**
. . . CDC 160-A computer
. . . CDC 1604 computer
. . . CDC 3100 computer
. . . CDC 3200 computer
. . . CDC 3600 computer
. . . CDC 3800 computer
. . . CDC 6000 series computers
. . . . CDC 6400 computer
. . . . CDC 6600 computer
. . . . CDC 6700 computer
. . . CDC 7000 series computers
. . . . CDC 7600 computer
. . . CDC 8090 computer
. . . CDC Cyber 170 series computers
. . . . CDC Cyber 175 computer
. . . CDC Cyber 74 computer
. . . CDC Cyber 174 computer
. . . CDC Cyber 203 computer
. . . CDC Cyber 205 computer
. . . CDC Star 100 computer
. . . EAI 600 computer
. . . EAI 8400 computer
. . . EAI 8800 computer
. . . EMR 6050 computer
. . . Ferranti Mercury computer
. . . GE computers
. . . . GE 625 computer
. . . . GE 635 computer
. . . Hewlett-Packard computers
. . . Honeywell computers
. . . . DDP 516 computer
. . . . Honeywell 600/6000 computer
. . . . Honeywell ADEPT computer
. . . . Honeywell DDP 116 computer
. . . IBM 360 computer
. . . IBM 370 computer
. . . IBM 650 computer
. . . IBM 704 computer
. . . IBM 709 computer
. . . IBM 1130 computer
. . . IBM 1401 computer
. . . IBM 1410 computer
. . . IBM 1620 computer
. . . IBM 2250 computer
. . . IBM 7030 computer
. . . IBM 7040 computer
. . . IBM 7044 computer
. . . IBM 7070 computer
. . . IBM 7074 computer
. . . IBM 7090 computer
. . . IBM 7094 computer
. . . ICL computers
. . . Illiac computers
. . . . Illiac 3 computer
. . . . Illiac 4 computer
. . . microcomputers
. . . . personal computers
. . . . . IBM personal computers
. . . . . Macintosh personal computers
. . . minicomputers
. . . . Nova computers
. . . Modcomp II computer
. . . Modcomp IV computer
. . . parallel computers
. . . . massively parallel processors
. . . . . Connection Machine
. . . . MIMD (computers)
. . . . SIMD (computers)
. . . PDP 15 computer
. . . PDP computers
. . . . PDP 7 computer
. . . . PDP 8 computer
. . . . PDP 9 computer
. . . . PDP 10 computer
. . . . PDP 11 computer
. . . . PDP 11/20 computer
. . . . PDP 11/40 computer
. . . . PDP 11/45 computer
. . . . PDP 11/50 computer
. . . . PDP 11/70 computer
. . . . PDP 12 computer
. . . Philco 2000 computer
. . . Raytheon computers
. . . RCA spectra 70 computer
. . . SDS 900 series computers
. . . . SDS 930 computer
. . . SDS 9300 computer
. . . SEL computers
. . . sequential computers
. . . SIGMA 5 computer
. . . SIGMA computers
. . . . SIGMA 9 computer
. . . Solomon computers
. . . Univac 1100 series computers
. . . . Univac 1105 computer
. . . . Univac 1106 computer
. . . . Univac 1107 computer
. . . . Univac 1108 computer
. . . . Univac 1110 computer
. . . Univac 80 computer
. . . Univac 418 computer
. . . Univac 490 computer
. . . Univac 494 computer
. . . Univac 1230 computer
. . . Univac Larc computer
. . . VAX computers
. . . . VAX-11 series computers
. . . . . VAX-11/780 computer
RT analog computers
analog to digital converters
associative processing (computers)
CDC computers
computer compatible tapes
computer program integrity
computer programs
computer systems programs
data processing
DDP computers
differential analyzers
hybrid computers
IBM computers
logic circuits
Turing machines
Univac computers

digital data
RT analog data
binary data
∞ data
data converters
data processing
video compression
video data

digital electronics
DEF The use of circuits in which there are usually only two states possible at any point. The two states can represent any of a variety of binary digits (bits) of information. Used for digital circuits.
UF *digital circuits*
GS circuits
. **digital electronics**
. . logic circuits
. . . **threshold gates**
RT analog to digital converters
binary digits
computer components
digital systems
digital techniques
digital to analog converters
∞ electronics
logical elements

digital filters
DEF Computational means of attenuating undesired frequencies in sets of time-dependent data.
GS electromagnetic wave filters
. electric filters
. . **digital filters**
. . . FIR filters
RT ∞ filters
microwave filters

digital integrators
GS circuits
. **digital integrators**
integrators
. **digital integrators**
RT binary integration
differential analyzers
functional integration
numerical integration

digital navigation
GS digital systems
. **digital navigation**
navigation
. **digital navigation**
RT air navigation
dead reckoning
inertial navigation
polar navigation
space navigation
surface navigation

digital radar systems
GS digital systems
. **digital radar systems**
RT airborne radar
antiradiation missiles
data processing equipment
radar detection
radar equipment
radar receivers
radar scanning
radar targets
radar tracking
radar transmission
signal analysis
surveillance radar
tracking radar

digital simulation
GS models
. mathematical models
. . **digital simulation**
simulation
. computerized simulation
. . **digital simulation**
RT analog simulation
biological models (mathematics)
computer systems simulation
war games

digital spacecraft television
GS communication equipment
. spacecraft television
. . **digital spacecraft television**
telecommunication
. pulse communication
. . **digital spacecraft television**
. spacecraft television
. . **digital spacecraft television**
television systems
. digital television
. . **digital spacecraft television**
. spacecraft television
. . **digital spacecraft television**
RT wireless communication

digital systems
UF *binary systems (digital)*
ternary systems (digital)
GS **digital systems**
. digital navigation
. digital radar systems
RT analog to digital converters
binary codes
binary digits
bitemary code
data systems
digital electronics
∞ systems
systems integration
telecommunication

digital techniques
RT BCH codes
bistable circuits
coding
computer programming
digital electronics
error correcting codes
error detection codes
∞ methodology
numerical control
shift registers
terminal area energy management
vector quantization

digital television
DEF Television in which picture redundancy is reduced or eliminated by transmitting only the data needed to define motion in the picture, as represented by changes in the areas of continuous white or black.
GS television systems
. **digital television**
. . digital spacecraft television
RT high definition television
pulse communication
television transmission
video compression

digital to analog converters
GS data converters
. **digital to analog converters**
RT analog to digital converters
∞ converters
digital electronics
peripheral equipment (computers)
plotters
signal encoding
x–y plotters

digital to voice translators
UF *DIVOT (voice translators)*
RT computers
∞ translators
vocoders
voice data processing

digital transducers
GS transducers
. **digital transducers**
RT interdigital transducers

digitalis
GS drugs
. **digitalis**

digitizers
USE **analog to digital converters**

digits
SN (EXCLUDES FINGERS AND TOES)
GS symbols
. alphanumeric characters
. . **digits**
. . . binary digits
RT ∞ codes
decimals
integers
number theory
∞ numbers

dihedral angle
GS geometry
. Euclidean geometry
. . angles (geometry)
. . . **dihedral angle**
RT lateral stability

dihedral effect
USE **lateral stability**

dihydrazine
GS hydrazines
. **dihydrazine**

dihydrides
GS hydrogen compounds
. hydrides
. . **dihydrides**

dihydroxyphenylalanine
USE **dopa**

diisocyanates
GS esters
. isocyanates
. . **diisocyanates**
nitrogen compounds
. cyano compounds
. . isocyanates
. . . **diisocyanates**

dikes (geology)
USE **rock intrusions**

dilatation
USE **stretching**

dilatational waves
GS elastic waves
. **dilatational waves**
RT longitudinal waves
P waves
S waves
seismic waves
∞ shear
stretching
∞ waves

dilatometers
USE **extensometers**

dilatometry
RT extensometers
∞ measurement
thermal expansion

diluents
RT additives
∞ agents
combustion products
contaminants
dispersions
exhaust gases
solvents

dilution
GS **dilution**
. geometric dilution of precision
RT attenuation
concentration (composition)
diffusion
dispersing
disposal
dissipation
dissolving
low concentrations
mixing
purity
∞ reduction
waste disposal

dimenhydrinate
GS amines
. **dimenhydrinate**
drugs
. antihistaminics
. . **dimenhydrinate**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **dimenhydrinate**

dimensional analysis
RT ∞ applications of mathematics
dimensionless numbers
dimensions
fibers (mathematics)
fluid flow
parameterization
scaling laws
similarity numbers
units of measurement

dimensional measurement
RT deformeters
distance measuring equipment

ellipsometry
∞ measurement
micrometers
size determination

dimensional stability
GS mechanical properties
. **dimensional stability**
. . structural stability
. . . shell stability
stability
. static stability
. . **dimensional stability**
. . . structural stability
. . . . shell stability
RT creep properties
curl (materials)
dynamic stability
Roche limit
thermal stability
tolerances (mechanics)

dimensionless numbers
GS **dimensionless numbers**
. Biot number
. Froude number
. Grashof number
. Hartmann number
. Laval number
. Lewis numbers
. Mach number
. mixing ratios
. Nusselt number
. Peclet number
. Prandtl number
. Rayleigh number
. Reynolds number
. . high Reynolds number
. . low Reynolds number
. Richardson number
. Schmidt number
. similarity numbers
. Stanton number
. Strouhal number
RT dimensional analysis
fluid flow
heat transfer
∞ numbers
scaling laws

dimensions
GS **dimensions**
. depth
. diameters
. film thickness
. fractals
. height
. . scale height
. length
. . diffusion length
. radii
. . Larmor radius
. target thickness
. width
RT amplitudes
∞ design
dimensional analysis
distance
drawings
engineering drawings
fineness ratio
geometry
magnitude
particle size distribution
relativistic effects
∞ span
thickness
topology
units of measurement
volume

dimercaprol
GS sulfur compounds
. thiols
. . **dimercaprol**

dimerization
GS synthesis (chemistry)
. polymerization
. . **dimerization**
RT copolymerization

dimers
GS oligomers
. **dimers**
prepolymers
. **dimers**
RT monomers
trimers

dimethyl compounds
(added July 1992)
GS organic compounds
. **dimethyl compounds**
. . dimethylhydrazines
RT methyl compounds
trimethyl compounds

dimethylhydrazines
GS amines
. **dimethylhydrazines**
hydrazines
. **dimethylhydrazines**
organic compounds
. dimethyl compounds
. . **dimethylhydrazines**
RT aerozine
methylhydrazine

diminution
USE **reduction**

dimming
RT brightness
light emission
∞ reduction

dimpling
RT bulging
metal working
stamping

Dining Philosophers Problem
RT distributed processing
interprocessor communication
problem solving
synchronism

dinitrates
GS nitrogen compounds
. nitrates
. . **dinitrates**

Diode–Transistor–Logic integ circuits
USE **DTL integrated circuits**

diodes
UF *p–i–n diodes*
GS electronic equipment
. **diodes**
. . crystal rectifiers
. . plasma diodes
. . semiconductor diodes
. . . avalanche diodes
. . . . cryosar
. . . Barritt diodes
. . . germanium diodes
. . . Gunn diodes
. . . . transferred electron devices
. . . junction diodes
. . . . MIM diodes
. . . . step recovery diodes
. . . light emitting diodes
. . . parametric diodes
. . . photodiodes
. . . Schottky diodes
. . . tunnel diodes
. . . varactor diodes
. . thermionic diodes
. . . cesium diodes
RT electron tubes
ion implantation
p–i–n junctions
rectifiers
semiconductor devices
solions
TRAPATT devices
triodes
varactor diode circuits

Dione
DEF One of the natural satellites of Saturn orbiting at a mean distance of 378,000 kilometers.
GS celestial bodies
. natural satellites
. . icy satellites
. . . **Dione**
. . Saturn satellites
. . . **Dione**
RT Saturn (planet)

diophantine equation
GS number theory
. **diophantine equation**
RT ∞ equations

diorite
GS rocks
. igneous rocks
. . **diorite**
RT minerals
soils

dioxides
GS chalcogenides
. oxides
. . **dioxides**
. . . carbon dioxide
. . . flint
. . . hydrogen peroxide
. . . silicon dioxide
. . . . quartz
. . . . . coesite
. . . . . stishovite
. . . sulfur dioxides
RT Karl Fischer reagent
peroxides
sulfur oxides
thorium oxides
titanium oxides

diphenyl compounds
GS organic compounds
. hydrocarbons
. . **diphenyl compounds**
. . . diphenyl hydantoin
RT ∞ chemical compounds

diphenyl hydantoin
GS amines
. **diphenyl hydantoin**
drugs
. antihistaminics
. . **diphenyl hydantoin**
organic compounds

. hydrocarbons
. . diphenyl compounds
. . . **diphenyl hydantoin**

diphosphates
GS phosphorus compounds
. phosphates
. . **diphosphates**
. . . adenosine diphosphate

diphtheria
GS **diseases**
. infectious **diseases**
. . bacterial diseases
. . . **diphtheria**
RT toxic diseases

diplexers
GS antenna components
. antenna couplers
. . **diplexers**
circuits
. **diplexers**
communication equipment
. **diplexers**
couplers
. antenna couplers
. . **diplexers**
RT couples
radar antennas
radar equipment
television equipment
transformers

dipole antennas
SN (SINGLE DIPOLE ANTENNAS)
DEF A straight radiator, usually fed in the center, and producing a maximum of radiation in the plane normal to its axis. The length specified is the overall length. SN (single dipole antennas)
GS antennas
. directional antennas
. . **dipole antennas**
RT antenna arrays
antenna design
backfire antennas
∞ dipoles
directors (antenna elements)
lens antennas
linear arrays
log periodic antennas
log spiral antennas
monopole antennas
omnidirectional antennas
parasitic elements (antennas)
radar antennas
turnstile antennas
Yagi antennas

dipole moments
GS moments
. **dipole moments**
. . electric moments
. . magnetic moments
RT domains
electrical properties
magnetic domains
magnetic properties
Van der Waals forces

∞ **dipoles**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Systems composed of two, separated, equal electric or magnetic charges of opposite sign.
RT dipole antennas
electric charge
electric dipoles
magnetic dipoles
magnetic poles
monopoles
orbiting dipoles
polarity
∞ poles
quadrupoles

dipping
RT baths
coatings
quenching (cooling)
submerging
wetting

Dirac equation
GS **wave equations**
. **Dirac equation**
RT ∞ equations
field theory (physics)
Klein–Gordon equation
Lorentz transformations
quantum theory

direct broadcast satellites
DEF Domestic satellites used for direct TV transmission to home receivers. Used for DBS (satellites).
UF *DBS (satellites)*
GS artificial satellites
. communication satellites
. . **direct broadcast satellites**
RT broadcasting
domestic satellite communications systems
satellite television
satellite transmission
space commercialization
space law
telecommunication
television transmission

direct current
UF *DC (current)*
GS electric current
. **direct current**
RT alternating current
current converters (AC to DC)
homopolar generators
inverted converters (DC to AC)
voltage converters (DC to DC)

direct current generators
USE **DC generators**

direct lift controls
RT ∞ control
lift devices

direct numerical simulation
(added October 1997)
UF *DNS (numerical analysis)*
GS analysis (mathematics)
. numerical analysis
. . **direct numerical simulation**
simulation
. **direct numerical simulation**
RT computational fluid dynamics
low Reynolds number
Navier–Stokes equation
reacting flow
turbulent flow

direct power generators
UF *energy converters*
GS electric generators
. **direct power generators**
. . DC generators
. . . homopolar generators
. . electrostatic generators
. fuel cells
. . biochemical fuel cells
. . . hydrogen oxygen fuel cells
. . . molten carbonate fuel cells
. . . phosphoric acid fuel cells
. . . regenerative fuel cells
. . . solid oxide fuel cells
. . magnetohydrodynamic generators
. photoelectric generators
. . photovoltaic cells
. . . . solar cells
. . . . . vertical junction solar cells
. primary batteries
. . . alkaline batteries
. . . dry cells
. . . . magnesium cells
. . . . nickel zinc batteries
. . . metal air batteries
. . . . zinc–oxygen batteries
. . . sodium sulfur batteries
. . . thermal batteries
. . radioisotope batteries
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 11
. . . SNAP 13
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. thermionic converters
. . . SNAP 13
. . . solar blankets
. thermoelectric generators
. . . SNAP 3
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 10A
. . . SNAP 11
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . . solar sea power plants
RT auxiliary power sources
∞ converters
electric batteries
∞ electric cells
electric energy storage
energy absorption films
energy conversion
energy conversion efficiency
∞ generators
. heat generation
photoelectric cells
solar generators
solar total energy systems
spacecraft power supplies

∞ **direction**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT autonomy
azimuth
bearing (direction)
directivity
line of sight
management

reversing

direction finders (radio)
USE **radio direction finders**

direction finding
DEF A procedure or process for locating or localizing the origin of radar, acoustical, or optical emissions.
RT bearing (direction)
radio direction finders
signal processing

directional antennas
DEF Antennas that radiate or receive radio signals more efficiently in some directions than in others. Used for tracking antennas.
UF *tracking antennas*
GS antennas
. **directional antennas**
. . dipole antennas
. . helical antennas
. . horn antennas
. . lens antennas
. . log periodic antennas
. . loop antennas
. . radar antennas
. . . radant
. . reflector antennas
. . . parabolic antennas
. . . two reflector antennas
. . rhombic antennas
. . slot antennas
. . steerable antennas
. . . inertialess steerable antennas
. . Yagi antennas
RT antenna arrays
antenna radiation patterns
backlobes
boresight error
boresights
endfire arrays
microwave antennas
microwave coupling
missile antennas
monopulse antennas
omnidirectional antennas
parasitic elements (antennas)
radio antennas
Sommerfeld approximation

directional control
UF *vector control*
GS attitude control
. **directional control**
. . thrust vector control
RT aircraft control
automatic control
∞ control
helicopter control
jet control
lateral control
longitudinal control
manual control
missile control
∞ reaction control
rocket engine control
satellite attitude control
satellite control
yaw

directional couplers
GS antenna components
. antenna couplers
. . **directional couplers**
couplers
. antenna couplers
. . **directional couplers**
RT coupling
couplings
impedance matching
microstrip transmission lines
microwave coupling
transmission lines
yokes

directional solidification (crystals)
DEF Controlled solidification (crystal growth) of molten metal in a casting so as to provide feed metal to the solidifying front of the casting.
GS crystallization
. **directional solidification (crystals)**
growth
. crystal growth
. . **directional solidification (crystals)**
solidification
. **directional solidification (crystals)**
RT containerless melts
eutectic composites
phase transformations

directional stability
DEF The property of an aircraft, rocket, etc., enabling it to restore itself from a yawing or sideslipping condition.
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . attitude stability
. . . . **directional stability**
. . . . . gyroscopic stability
stability
. dynamic stability
. . motion stability
. . . attitude stability
. . . . **directional stability**
. . . . . gyroscopic stability
RT aerodynamic stability
aircraft stability
controllability
flow stability
horizontal orientation
hovering stability
lateral oscillation
lateral stability
longitudinal stability
rotary stability
spacecraft stability
stability augmentation
vertical orientation
yaw

directivity
DEF The ability of an antenna to radiate or receive more energy in some directions.
RT alignment
anisotropy
collimation
crystallography
∞ direction
field strength
instrument orientation
isotropy
look angles (electronics)
∞ orientation

directories
DEF Alphabetical, geographical, or classified listings by field of persons, organizations, programs and/or objects such as instruments, devices, and products. Use of this term excludes directories in computers.
RT handbooks
manuals

directors (antenna elements)
GS antenna components
. parasitic elements (antennas)
. . **directors (antenna elements)**
antennas
. parasitic elements (antennas)
. . **directors (antenna elements)**
RT dipole antennas
radio receivers
reflectometers
reflectors
rods
Yagi antennas

Dirichlet problem
GS boundary value problems
. **Dirichlet problem**
RT differential equations
hyperbolic differential equations
∞ problems

dirigibles
USE **airships**

dirt
GS soils
. **dirt**
RT contaminants
dust
impurities
particles
rocks

DIS
USE **distributed interactive simulation**

disabilities
UF *handicaps*
RT auditory defects
blindness
frustration
∞ inhibition
paralysis
wheelchairs

disarmament
RT armed forces (foreign)
armed forces (United States)
international cooperation
weapons

disasters
DEF Large-scale drought, glacier movement, floods, fires, storms, etc.
RT accidents
casualties
emergencies
first aid
sabotage

∞ **discharge**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT detonation
dispersing
disposal
drainage
effluents
ejection
electric discharges
electrodeless discharges
elimination
emission
exhausting
expellants
explosions
outlets
releasing

relieving
ring discharge
unloading
venting

discharge coefficient
GS coefficients
. flow coefficients
. . **discharge coefficient**
RT axial flow
flow velocity
influence coefficient
mass flow factors
nozzle flow
nozzle geometry
nozzle thrust coefficients
wall flow

discharge tubes
USE **gas discharge tubes**

dischargers
GS **dischargers**
. static dischargers
RT dissipation
neutralizers

disciplining
RT liabilities
morale
penalties

discoloration
RT color
damage
degradation
fading
staining

disconnect devices
UF disconnectors
RT circuit breakers
connectors
decoupling
dumping
ejection
electric connectors
electric fuses
electric relays
∞ relay
releasing

disconnectors
USE **disconnect devices**

discontinuity
DEF A break in sequence or continuity of anything.
GS **discontinuity**
. shock discontinuity
RT analysis (mathematics)
catastrophe theory
Gibbs phenomenon
incoherence
vortex streets

Discos (satellite attitude control)
DEF A satellite orbit "Disturbance COmpensation System" designed to maintain an object (proof object) in correct orbit by detecting forces and compensating for them by using thrusters.
RT attitude stability
Nova satellites
satellite perturbation
spacecraft stability
Transit satellites

Discoverer recovery capsules
UF *DRC (capsule)*
GS space capsules
. **Discoverer recovery capsules**
RT recovery parachutes
spacecraft recovery

Discoverer satellites
GS artificial satellites
. **Discoverer satellites**
RT Agena A rocket vehicle
Agena B rocket vehicle
Agena rocket vehicles
Thor Agena launch vehicle

discovering
USE **exploration**

Discovery (Orbiter)
UF *Space Shuttle Orbiter 103*
GS manned spacecraft
. space shuttles
. . Space Shuttle orbiters
. . . **Discovery (Orbiter)**
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . space shuttles
. . . . Space Shuttle orbiters
. . . . . **Discovery (Orbiter)**
RT manned space flight
Space Shuttle mission 41-D
Space Shuttle mission 51-A
Space Shuttle mission 51-C
Space Shuttle mission 51-D
Space Shuttle mission 51-G
Space Shuttle mission 51-I
∞ spacecraft

discrete address beacon system
DEF Radar beacon system with discretely addressable transponders and a ground-air-ground data link for automated air traffic control (FAA).
GS landing aids
. airport beacons
. . **discrete address beacon system**
navigation aids
. beacons
. . airport beacons
. . . **discrete address beacon system**
. . radar beacons
. . . **discrete address beacon system**
radar equipment
. radar beacons
. . **discrete address beacon system**
RT air traffic control
data links
ground-air-ground communication
secondary radar
∞ systems

discrete cosine transform
(added March 1994)
UF *DCT (mathematics)*
GS transformations (mathematics)
. **discrete cosine transform**
RT data compression
discrete functions
image processing
signal processing
video compression

discrete functions
GS functions (mathematics)
. **discrete functions**
RT discrete cosine transform
discretization (mathematics)
distribution functions
histograms
normal density functions
Poisson density functions
probability density functions
probability distribution functions
statistical analysis

discretization (mathematics)
(added June 1997)
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **discretization (mathematics)**
RT discrete functions

discriminant analysis (statistics)
DEF A linear combination of a set of N variables that will classify (into two different classes) the events or items for which the measurements of the N variables are available, with the smallest proportion of misclassifications. Used for discriminant functions.
UF *discriminant functions*
GS functions (mathematics)
. **discriminant analysis (statistics)**
statistical analysis
. **discriminant analysis (statistics)**
RT ∞ classifying
multivariate statistical analysis
populations
temporal logic

discriminant functions
USE **discriminant analysis (statistics)**

discrimination
GS **discrimination**
. sensory discrimination
. . brightness discrimination
. . tactile discrimination
. . visual discrimination
RT acuity
comparator circuits
∞ differentiation
selectivity
signal detection
signal detectors
target recognition

discriminators
DEF In general, a circuit in which output depends upon the difference between an input signal and a reference signal.
GS circuits
. **discriminators**
. . Fraunhofer line discriminators
. . frequency discriminators
RT analog computers
comparators
error signals
intermodulation
RC circuits

∞ **discussion**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT conferences
evaluation
examination
reports
reviewing

diseased vegetation
USE **plant diseases**

diseases
SN (RESTRICTED TO DISEASES IN ANIMALS INCLUDING MAN—FOR DISEASES IN PLANTS SEE PLANT DISEASES)
GS **diseases**
. albinism
. anemias
. arteriosclerosis
. arthritis
. ataxia
. atelectasis
. bone demineralization
. colic
. cyanosis
. diabetes mellitus
. encephalitis
. epilepsy
. eye diseases
. . asthenopia
. . astigmatism
. . cataracts
. . conjunctivitis
. . glaucoma
. . keratitis
. . phoria
. fat embolisms
. fibrosis
. . cystic fibrosis
. headache
. heart diseases
. . angina pectoris
. . coronary artery disease
. . infarction
. . . myocardial infarction
. infectious diseases
. . airborne infection
. . bacterial diseases
. . . cholera
. . . diphtheria
. . . keratitis
. . . syphilis
. . . tuberculosis
. . . typhoid
. . . typhus
. . conjunctivitis
. . dermatitis
. . . contact dermatitis
. . fungal diseases
. . hepatitis
. . meningitis
. . parasitic diseases
. . viral diseases
. . . acquired immunodeficiency syndrome
. . . influenza
. . . poliomyelitis
. . . smallpox
. kidney diseases
. . nephritis
. lithiasis
. metabolic diseases
. narcolepsy
. neurasthenia
. neuritis
. occupational diseases
. osteoporosis
. paralysis
. Parkinson disease
. pulmonary lesions
. radiation sickness
. respiratory diseases
. . aerosinusitis
. . asthma
. . emphysema
. . influenza
. . pneumonia
. . tuberculosis
. rheumatic diseases
. tachycardia
. thrombopenia
. thrombosis
. tooth diseases
. toxic diseases
. . benzene poisoning
. . beryllium poisoning
. . carbon monoxide poisoning
. . carbon tetrachloride poisoning
. . hydrocarbon poisoning
. . lead poisoning
. tumors
. . neoplasms
. . . cancer
. . . . leukemias
. ulcers
. urolithiasis
RT chronic conditions
creatinine
cures
diagnosis
disorders
etiology
medical science
pathogenesis
pathological effects
plant diseases
pneumothorax
prophylaxis
signs and symptoms
symptomology
therapy
vaccines
veterinary medicine

dishes
USE **parabolic reflectors**

disilicides
GS silicon compounds
. silicides
. . **disilicides**
RT silanes
silicates

disinfectants
USE **antiseptics**

disintegration
RT atomizing
comminution
crushers
crushing
damage
decay
decomposition
deterioration
flaking
grinding (comminution)
ionization
lysogenesis

disk galaxies
DEF Galaxies consisting of a central bulge of a spheroidal aggregation of stars and a surrounding disk of stars fanning outward in a thin layer.
GS celestial bodies
. galaxies
. . **disk galaxies**
RT astrophysics
barred galaxies
blazars
elliptical galaxies
galactic clusters
galactic evolution
galactic halos
galactic nuclei
galactic rotation
galactic structure
local group (astronomy)
radio galaxies
spiral galaxies
star clusters
Virgo galactic cluster

disk operating system (DOS)
(added October 1988)
DEF A program with which the computer performs such mundane but useful tasks as storing, locating, and retrieving files on disk, reading the keyboard, and issuing display and print information.
GS computer programs
. computer systems programs
. . operating systems (computers)
. . . **disk operating system (DOS)**
RT assembler routines
compilers
computer information security
computer systems design
∞ disks
graphical user interface
input/output routines
magnetic disks
∞ routines
∞ systems

∞ **disks**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT actuator disks
disk operating system (DOS)
disks (shapes)
intervertebral disks
magnetic disks

disks (shapes)
GS **disks (shapes)**
. actuator disks
. intervertebral disks
. rotating disks
RT accretion disks
aerodynamic configurations
bodies of revolution
circular plates
∞ disks
∞ plates
video disks

dislocations (materials)
GS **dislocations (materials)**
. crystal dislocations
. . edge dislocations
. . screw dislocations
RT displacement
flow theory
∞ materials

disorders
GS disorientation
. **disorders**
RT chronic conditions
depersonalization
∞ depression
detachment
diseases
∞ disturbances
dithers
emotional factors
human behavior
jet lag
psychology
psychoses

violence

disorientation
SN (EXCLUDES PHYSICAL OR MATHEMATICAL MISALIGNMENT)
GS **disorientation**
. desynchronization (biology)
. disorders
. jet lag
RT biological effects
Coriolis effect
detachment
dithers
irrationality
misalignment
psychological effects
psychology
staggering
weightlessness

dispatching
USE **distributing**

dispensers
RT distributors
ejectors
feeders
materials handling
rollers
sprayers

dispersing
SN (OF MATERIALS OR PARTICLES)
RT agitation
assimilation
chemical release modules
circulation
cloud dispersal
colloiding
deflection
diffusion
dilution
∞ discharge
∞ dispersion
dispersions
disposal
dissipation
distributing
∞ distribution
entrainment
exhausting
fog dispersal
homogenizing
Langevin formula
permeating
pollution transport
∞ reduction
releasing
scattering
∞ separation
shaking
spraying
spreading
stirring
suspending (mixing)
swirling

∞ **dispersion**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT deviation
diffusion
dispersing
dispersions
dust
Kramers-Kronig formula
magnetic dispersion
mixers
random errors
statistical analysis
variability
wave dispersion

dispersion precipitation hardening
USE **precipitation hardening**

dispersion strengthening
(added February 1994)
GS **dispersion strengthening**
. oxide dispersion strengthening
RT alloys
hardening (materials)
heat resistant alloys
∞ metallurgy
∞ strength

dispersions
GS mixtures
. **dispersions**
. . colloids
. . . aerosols
. . . . fog
. . . colloidal propellants
. . emulsions
. . . photographic emulsions
. . . . nuclear emulsions
. . liquid-gas mixtures
. . . aerosols
. . . . fog
. . plastisols
. . . smoke
RT Brownian movements
colloidal generators
crop dusting
diluents
dispersing
∞ dispersion
dust
ferrofluids
fog dispersal
fumes
mist
particles
particulates
slumes
slurry propellants
suspending (mixing)
∞ suspensions

displacement
DEF A vector quantity that specifies the change of position of a body the change of position of a body or particle usually measured from the mean position or position of rest.
GS **displacement**
. crack opening displacement
RT amplitudes
bending
bias
boresight error
deflection
deformation
dislocations (materials)
distortion
divergence
engines
flexible spacecraft
heaving
level (quantity)
magnitude
∞ motion
nutation
positioning
skewness
temperature inversions
variations
vibration

displacement measurement
SN (MEASUREMENT IN CHANGE OF POSITION)
GS mechanical measurement
. **displacement measurement**
RT boresight error
shearography

display devices
UF *data readout systems*
display systems
visual displays
GS **display devices**
. approach indicators
. flat panel displays
. flow direction indicators
. . wind vanes
. gyro horizons
. head-up displays
. helmet mounted displays
. kinoform
. microvision landing aid
. plasma display devices
. position indicators
. . plan position indicators
. . radio direction finders
. . spacecraft position indicators
. radarscopes
. . plan position indicators
. speed indicators
. . tachometers
RT airborne surveillance radar
aircraft equipment
aircraft instruments
audio visual equipment
automatic typewriters
blinking
cancellation circuits
cathode ray tubes
charts
cockpit weather information systems
computer graphics
consoles
control boards
crew procedures (inflight)
crew procedures (preflight)
data recorders
∞ detectors
dials
diffractive optics
electrochromism
flight control
flight instruments
flying spot scanners
graphical user interface
human-computer interface
image reconstruction
image tubes
imagery
images
indicating instruments
instrument landing systems
instrument receivers
∞ instruments
light emitting diodes
lists
man machine systems
map matching guidance
monitors
navigation aids
perceptual errors
photographs
photopolymers
picture tubes

planetariums
∞ plots
plotters
plotting
printers (data processing)
promotion
radar
radar resolution
rapid ballistics identification
raster scanning
reading
readout
real time operation
receivers
remote consoles
scientific visualization
∞ screens
solar compasses
∞ strip
∞ systems
target simulators
TERCOM
video data
video equipment
viewing
visual aids
visual control
warning systems

display systems
USE **display devices**

disposal
GS **disposal**
. **waste disposal**
. . composting
. . hazardous material disposal (in space)
RT agitation
∞ containers
decontamination
deletion
dilution
∞ discharge
dispersing
dissipation
distributing
∞ distribution
dumping
ejection
elimination
emptying
exhausting
expulsion
isolation
jettisoning
materials handling
materials recovery
removal
sinks
spreading
∞ storage
unloading

disrupting
RT ∞ interference
rupturing

dissection
RT autopsies
pathology

dissipation
UF *dissipators*
GS **dissipation**
. **energy dissipation**
. ohmic dissipation
RT atmospheric turbulence
attenuation
damping
decontamination
depletion
diffusion
dilution
dischargers
dispersing
disposal
exhausting
pollution
purification
∞ reduction
removal
waste disposal

dissipators
USE **dissipation**

dissociation
DEF The separation of a complex molecule into constituents by collision with a second body, or by absorption of a photon. The product of dissociation of a molecule is two ions, one positively charged and one negatively charged. Used for molecular dissociation.
UF *molecular dissociation*
GS **dissociation**
. autoionization
. biodegradability
. gas dissociation
. photodissociation
. radiolysis
. thermal dissociation
RT atomic recombination
chemical equilibrium
Debye-Huckel theory
decomposition
electrodissolution
heat of dissociation
ionization
molecular diffusion
molecular interactions

dissolution
USE **dissolving**

dissolved gases
DEF Gases in solution.
GS gases
. **dissolved gases**
RT aeration
dissolving
mixtures
oxygenation
solubility
solutions

dissolved organic matter
(added October 1997)
UF *gelbstoff*
RT chlorophylls
organic solids
phytoplankton
sea water
sediments
solutes
water color
water pollution

dissolving
UF *dissolution*
GS mixing
. **dissolving**
RT **aeration**
chemical **attack**
chemical cleaning
cleaning
compounding
corrosion
diffusion
dilution
dissolved gases
extraction
homogenizing
leaching
precipitation (chemistry)
∞ separation
softening
solubility
solutes
∞ solution
solvent retention
solvents
washing

dissymmetry
USE **asymmetry**

distance
GS **distance**
. Debye length
. **diffusion length**
. **miss distance**
. optical slant range
. radar range
. radio range
. range and range rate tracking
. reentry range
RT aircraft performance
aircraft specifications
altitude
depth
dimensions
focusing
geometry
height
length
position (location)
proximity
radar navigation
∞ range
range (extremes)
takeoff runs
∞ travel

distance measuring equipment
DEF A radio aid to navigation which provides distance information by measuring total round trip time of transmission from an integrator to a transponder and return.
GS measuring instruments
. **distance measuring equipment**
. . altimeters
. . . laser altimeters
. . . radio altimeters
. . geodimeters
. . range finders
. . . optical range finders
. . . laser range finders
. . stadimeters
. . tellurometers
RT automatic flight control
automatic landing control
Decca navigation
depth measurement
dimensional measurement
LORAC navigation system
loran
lunar rangefinding
micrometers
navigation
navigation aids
omnidirectional radio ranges
position indicators

radar
radar equipment
radar measurement
radar navigation
radio navigation
range errors
Shoran
solar compasses
sonar
sound ranging

distance perception
USE **space perception**

distillation
GS **distillation**
. stripping (distillation)
RT chemical fractionation
concentrating
condensing
demineralizing
desalinization
diffusion
evaporation
flashing (vaporizing)
materials recovery
purging
purification
rectification
refining
∞ separation
tar sands
vaporizing
washing

distillation equipment
RT columns (process engineering)
condensers (liquefiers)
∞ equipment
stills

distortion
DEF An undesired change in waveform. In a system used for transmission or reproduction of sound, a failure by the system to transmit or reproduce a received waveform with exactness. An undesired change in the dimensions or shape of a structure as, distortion of a fuel tank due to abnormal stresses or extreme temperature gradients.
GS **distortion**
. flow distortion
. signal distortion
. surface distortion
RT aberration
abnormalities
astigmatism
asymmetry
bending
buckling
camber
deflection
deformation
deviation
displacement
expansion
failure
flexing
folding
frequency pulling
geometric accuracy
ghosts
heaving
refraction
skewness
stretching
swelling
temperature inversions
twisting
variations
warpage
wrinkling

distributed amplifiers
GS amplifiers
. **distributed amplifiers**
RT frequency response
transmission lines

distributed Bragg reflector lasers
USE **DBR lasers**

distributed feedback lasers
DEF Lasers containing a periodic medium which provides the necessary feedback for laser action.
GS stimulated emission devices
. lasers
. . **distributed feedback lasers**
RT DBR lasers
feedback amplifiers
feedback control
heterojunction devices
laser outputs
lasing
semiconductor lasers
solid state lasers

distributed interactive simulation
(added December 1996)
SN ((Multiple simultaneous use of simulation in networks))
UF *DIS*
GS simulation
. computerized simulation
. . **distributed interactive simulation**
RT computer networks
distributed processing

distributed memory
(added April 1997)
GS memory (computers)
. **distributed memory**
RT architecture (computers)
distributed processing
interprocessor communication
multiprocessing (computers)
parallel processing (computers)

distributed parameter systems
RT control theory
differential equations
independent variables
integral equations
linear circuits
linear systems
network analysis
nonlinear systems
∞ systems

distributed processing
DEF Processing with multiple small computers that are capable of operating independently but can communicate over a network with each other and/or a central computer.
GS data processing
. **distributed processing**
RT architecture (computers)
client server systems
computer networks
computer systems design
Dining Philosophers Problem
distributed interactive simulation
distributed memory
microprocessors
transputers
VSAT (network)
wide area networks

distributing
UF dispatching
RT allocations
assimilation
commercial energy
dispersing
disposal
∞ distribution
domestic energy
∞ food
industrial energy
inventory control
materials handling
positioning
proportion
resource allocation
transportation
transportation energy

∞ **distribution**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT allocations
assimilation
brightness distribution
circulation distribution
demography
dispersing
disposal
distributing
distribution (property)
geographic distribution
kurtosis
load distribution (forces)
mass distribution
materials handling
positioning
pressure distribution
spectral energy distribution
statistical distributions
thrust distribution
transportation

distribution (property)
UF *pattern distribution*
GS **distribution (property)**
. angular distribution
. Boltzmann distribution
. brightness distribution
. charge distribution
. current distribution
. electron distribution
. . electron density profiles
. energy distribution
. . spectral energy distribution
. flow distribution
. force distribution
. frequency distribution
. . kurtosis
. hole distribution (electronics)
. hole distribution (mechanics)
. interference lift
. ion distribution
. load distribution (forces)
. mass distribution
. moment distribution
. neuron distribution
. pressure distribution
. radial distribution
. radiation distribution
. . antenna radiation patterns
. . . sidelobes
. diffraction patterns
. . Kossel pattern

. . . rainbows
. spatial distribution
. . horizontal distribution
. . vertical distribution
. . . star distribution
. . geographic distribution
. strain distribution
. stress distribution
. . stress concentration
. temperature distribution
. velocity distribution
RT chemical composition
∞ cross sections
∞ distribution
dynamic characteristics
field theory (physics)
gradients
jet lift
lift
∞ patterns
∞ profiles
rotor lift
statistical distributions
synthetic arrays
zero lift

distribution functions
DEF The density functions or number of particles per unit volume of phase space. The distribution functions are a function of the three space coordinates and the three velocity coordinates.
GS functions (mathematics)
. **distribution functions**
. . probability distribution functions
RT Chapman–Enskog theory
discrete functions
maximum entropy method
∞ nets
probability theory
statistical distributions

distribution moments
UF *statistical moments*
GS moments
. **distribution moments**
. . mean
. . orthogonality
. . standard deviation
RT average
median (statistics)
method of moments
mode (statistics)
skewness
statistical distributions
variance (statistics)

distributors
RT commutators
dispensers
feeders
ignition systems
internal combustion engines
materials handling
rollers
sprayers

District of Columbia
GS nations
. United States
. . **District of Columbia**
RT Potomac River Valley (MD-VA-WV)

disturbance theory
USE **perturbation theory**

∞ **disturbances**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bursts
disorders
electromagnetic interference
ionospheric disturbances
ionospheric storms
magnetic disturbances
perturbation
radio auroras
radio bursts
solar activity
storms
sudden ionospheric disturbances
vortices

disturbing functions
GS functions (mathematics)
. **disturbing functions**
RT perturbation theory

disulfides
GS chalcogenides
. sulfides
. . **disulfides**
. . . carbon disulfide
sulfur compounds
. sulfides
. . **disulfides**
. . . carbon disulfide

ditches
RT canals
irrigation
landforms
troughs

∞ **ditching**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ditching (landing)
excavation

ditching (excavation)
USE **excavation**

ditching (landing)
GS crashes
. crash landing
. . **ditching (landing)**
landing
. aircraft landing
. . crash landing
. . . **ditching (landing)**
. water landing
. . **ditching (landing)**
RT aircraft accidents
∞ ditching
glide landings

dithers
GS shaking
. **dithers**
shivering
. **dithers**
RT disorders
disorientation
emotional factors
human behavior
∞ inhibition
irrationality
vacillation

dithiols
USE **thiols**

diuresis
RT body fluids
edema
urination

diuretics
GS **diuretics**
. aminophylline
RT acetazolamide
ureas

diurnal rhythms
USE **circadian rhythms**

diurnal variations
GS variations
. periodic variations
. . **diurnal variations**
RT cycles
darkness
daytime
magnetic variations
night
nocturnal variations
tropopause
wind variations

divergence
DEF The expansion or spreading out of a vector field, also a precise measure thereof. A static instability of a lifting surface or of a body on a vehicle wherein the aerodynamic loads tending to deform surface or body are greater than the elastic restoring forces.
GS **divergence**
. magnetic charge density
RT catastrophe theory
convergence
deviation
differences
displacement
∞ drift
Fourier analysis
functions (mathematics)
geostrophic wind
refraction
series (mathematics)
series expansion
variations
vortices

divergent nozzles
RT conical nozzles
exhaust nozzles
nozzle geometry
nozzle walls
∞ nozzles
rocket nozzles
thrust chambers
wind tunnel nozzles

diverters
GS **diverters**
. divertors (fusion reactors)
RT baffles
blast deflectors
bypasses
deflectors
∞ diffusers
dividers
flame deflectors
∞ separation
separators
shielding
valves

divertors (fusion reactors)
(added March 1995)
GS diverters
. stevertors (fusion reactors)
RT limiters (fusion reactors)
magnetic field configurations
plasma control
tokamak devices

dividers
SN (EXCLUDES VOLTAGE AND FREQUENCY DIVIDERS)
GS separators
. **dividers**
RT baffles
∞ barriers
curtains
diverters
panels
spacers

divides (landforms)
GS landforms
. **divides (landforms)**
RT drainage patterns
mountains
watersheds

dividing (mathematics)
GS number theory
. **dividing (mathematics)**
RT arithmetic
computation
congruences
∞ division
quotients

diving (underwater)
GS submerged bodies
. **diving (underwater)**
RT barotrauma
decompression sickness
human tolerances
medical phenomena
physiological effects
underwater physiology
underwater tests

∞ division
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cell division
dividing (mathematics)
number theory
∞ separation
subdivisions
subsidiaries

DIVOT (voice translators)
USE **digital to voice translators**

Djibouti
(added February 1989)
GS nations
. **Djibouti**
RT Africa

DME-A satellite
USE **Explorer 31 satellite**

DMSP satellites
DEF Satellites of the defense meteorological satellite program, a program sponsored by the United States Air Force System Command's Space Division which provides timely global imagery and specialized meteorological data for supporting a variety of Department of Defense operations. Used for Defense Meteorological Satellite Program.
UF *Defense Meteorological Satellite Program*
GS artificial satellites
. meteorological satellites
. . **DMSP satellites**
military spacecraft
. **DMSP satellites**
RT air defense
∞ defense
defense program
meteorology
photomapping
photoreconnaissance
remote sensing
satellite-borne photography

DNA
USE **deoxyribonucleic acid**

DNS (numerical analysis)
USE **direct numerical simulation**

DO-27 aircraft
UF *Dornier DO-27 aircraft*
GS Dornier aircraft
. **DO-27 aircraft**
general aviation aircraft
. **DO-27 aircraft**
light aircraft
. **DO-27 aircraft**
monoplanes
. **DO-27 aircraft**
passenger aircraft
. **DO-27 aircraft**
RT ∞ aircraft

DO-28 aircraft
UF *Dornier DO-28 aircraft*
GS Dornier aircraft
. **DO-28 aircraft**
general aviation aircraft
. **DO-28 aircraft**
light aircraft
. **DO-28 aircraft**
monoplanes
. **DO-28 aircraft**
passenger aircraft
. **DO-28 aircraft**
RT ∞ aircraft

DO-31 aircraft
UF *Dornier DO-31 aircraft*
GS Dornier aircraft
. **DO-31 aircraft**
jet aircraft
. turbofan aircraft
. . **DO-31 aircraft**
monoplanes
. **DO-31 aircraft**
transport aircraft
. **DO-31 aircraft**
V/STOL aircraft
. **DO-31 aircraft**
RT ∞ aircraft

DO-328 aircraft
(added September 1994)
GS commercial aircraft
. **DO-328 aircraft**
Dornier aircraft
. **DO-328 aircraft**
jet aircraft
. turboprop aircraft
. . **DO-328 aircraft**
passenger aircraft
. **DO-328 aircraft**
transport aircraft
. **DO-328 aircraft**
RT ∞ aircraft

docking
USE **spacecraft docking**

document markup languages
(added July 1995)
DEF Standardized nomenclatures that specify the organization of complex text (including technical and scientific notation, graphics, and images) and define the document type, data elements within the document, and the relationship between data elements for electronically prepared, stored, interchanged, and published documents.
UF *DSSSL*
HTML
HYTIME
SGML
SPDL
GS languages
. **document markup languages**
RT documentation
electronic publishing
human-computer interface
hypertext
information transfer
printing
standards

document storage
RT data storage
documentation
∞ files
reproduction (copying)
∞ storage

documentation
SN (LIMITED TO WRITTEN MATERIAL THAT ACCOMPANIES, EXPLAINS, SPECIFIES OR DESCRIBES EQUIPMENT OR SYSTEMS)
DEF The assembling, coding, and disseminating of recorded knowledge.
GS literature
. **documentation**
RT acquisition
bibliographies
biography
case histories
catalogs (publications)
conferences
data retrieval
document markup languages
document storage
documents
histories
indexes (documentation)
information
information dissemination
information resources management
information retrieval
knowledge
libraries
news
records
∞ reference systems
reports
selective dissemination of information
space glossaries
summaries
technical writing
technology transfer
translating

documents
UF publications
GS **documents**
. abstracts
. bibliographies
. catalogs (publications)
. . astronomical catalogs
. congressional reports
. dictionaries
. drawings
. . engineering drawings
. . . blueprints
. handbooks
. . user manuals (computer programs)
. manuals
. . installation manuals
. . user manuals (computer programs)
. papers
. periodicals
. postlaunch reports
. Presidential reports
. proposals
. records
. . video disks
. supplements
. textbooks
. texts
. theses
RT conferences
copyrights
documentation
electronic publishing
format
hardware utilization lists
indexes (documentation)
information retrieval
libraries
literature
reports
technology transfer

Dodge satellite
GS artificial satellites
. **Dodge satellite**

doghouses (electronics)
DEF Small enclosures placed at the base of transmitting antenna towers to house antenna tuning equipment.
GS housings
. **doghouses (electronics)**
radar equipment
. **doghouses (electronics)**
RT enclosures
radar antennas

dogs
GS animals
. vertebrates
. . mammals
. . . **dogs**

dollies
GS surface vehicles
. **dollies**
RT carriages
materials handling
sleds
trucks
undercarriages

dolomite (mineral)
DEF A common rock-forming rhombohedral material consisting of calcium, magnesium, and carbonates. It is used for refractory products.
GS carbon compounds
. carbonates
. . **dolomite (mineral)**
magnesium compounds
. **dolomite (mineral)**
minerals
. **dolomite (mineral)**
RT aggregates
limestone
rocks
sedimentary rocks

dolphins
GS animals
. vertebrates
. . mammals
. . . marine mammals
. . . . **dolphins**

domain wall
RT domains
magnetic domains
∞ motion

domains
GS **domains**
. magnetic domains
RT dipole moments
domain wall
electrical properties
range (extremes)

∞ **domes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT domes (geology) ↑
domes (structural forms)

domes (geology)
GS geology
. **domes (geology)**
RT anticlines
∞ domes
geosynclines
synclines

domes (structural forms)
GS shells (structural forms)
. **domes (structural forms)**
. . radomes
RT ∞ cupolas
∞ domes
hemispherical shells
housings
pressure vessels
protuberances

domestic energy
RT allocations
commercial energy
distributing
economic factors
∞ energy
energy consumption
energy conversion
industrial energy
solar cooling
solar houses
transportation energy
water heating

domestic satellite communications systems
RT communication satellites
direct broadcast satellites
microwave transmission
RCA Satcom satellites
satellite networks
satellite transmission
∞ systems

dominance
GS **dominance**
. eye dominance
RT genetics

Dominica
GS landforms
. islands
. . West Indies
. . . **Dominica**
nations
. **Dominica**

Dominican Republic
GS nations
. **Dominican Republic**
RT Caribbean region
Caribbean Sea

Domino propellants
GS propellants
. high energy propellants
. . **Domino propellants**
RT plasticizers
rocket oxidizers
solid rocket propellants

Donnell equations
RT buckling
∞ equations
stress analysis

donor materials
GS semiconductors (materials)
. **donor materials**
RT antisite defects
carrier density (solid state)
electrons
holes (electron deficiencies)
∞ materials
modulation doping

doors
UF exits (doors)
RT air locks
apertures
curtains
egress
entrances
floors
gates (openings)
hatches
ingress (spacecraft passageway)
openings
outlets
∞ thresholds
windows (apertures)

dopa
DEF An intermediate organic compound produced by oxidation of tyrosine by tyramine; also, an intermediate product in the synthesis of both epinephrine and melanin. Used for dihydroxyphenylalanine.
UF dihydroxyphenylalanine
GS acids
. amino acids
. . **dopa**
organic compounds
. amino acids
. . **dopa**
RT ∞ chemical compounds
dopamine
melanin
oxidation
pigments

dopamine
(added June 1997)
RT catecholamine
dopa

drugs
epinephrine
neurophysiology
neurotransmitters
norepinephrine

doped crystals
GS crystals
. **doped crystals**
RT crystal growth
crystal optics
crystal structure
gadolinium-gallium garnet
MOSFETS
modulation doping

dopes
RT additives
fillers
finishes
gels
primers (coatings)
sealers

doping (additives)
USE **additives**

Doppler effect
DEF The change in frequency with which energy reaches a receiver when the receiver and the energy source are in motion relative to each other. Used for DOVAP and stellar Doppler shift.
UF *DOVAP*
stellar Doppler shift
GS **Doppler effect**
. Doppler-Fizeau effect
RT∞ **effects**
elastic waves
electromagnetic radiation
Fizeau effect
frequency shift
optical heterodyning
radial velocity
red shift
satellite doppler positioning
stellar motions

Doppler navigation
DEF Dead reckoning performed automatically by a device which gives a continuous indication of position by integrating the speed derived from measurement of the Doppler effect of echoes from directed beams of radiant energy transmitted from the craft.
GS navigation
. **Doppler navigation**
RT air navigation
all-weather air navigation
dead reckoning
radar navigation
radio navigation
satellite doppler positioning

Doppler radar
DEF Radar which utilizes the Doppler effect to determine the radial component of velocities of relative radar targets or to select targets having particular radial velocities.
GS radar
. **Doppler radar**
. . multistatic radar
. . pulse Doppler radar
. . . monopulse radar
. . . Shuttle Imaging Radar
RT airborne radar
coherent radar
continuous wave radar
monopulse radar
moving target indicators
polystation doppler tracking system
pulse radar
radar detection
radar equipment
radar navigation
radar networks
radar tracking
satellite doppler positioning
surveillance radar

Doppler-Fizeau effect
DEF The Doppler effect applied to a source of light. When the distance between the observer and the source of light is diminishing, the lines of the spectrum are displaced towards the violet, and, when the distance is increasing, they are displaced toward the red, the displacement being proportional to the relative velocity of approach or recession.
GS Doppler effect
. **Doppler-Fizeau effect**
RT∞ effects
Fizeau effect
frequency shift
radar navigation
red shift
stellar motions

Dornier aircraft
GS **Dornier aircraft**
. DO-27 aircraft
. DO-28 aircraft
. DO-31 aircraft
. DO-328 aircraft
RT∞ aircraft

Dornier DO-27 aircraft
USE **DO-27 aircraft**

Dornier DO-28 aircraft
USE **DO-28 aircraft**

Dornier DO-31 aircraft
USE **DO-31 aircraft**

Dornier paraglider rocket vehicle
GS rocket vehicles
. single stage rocket vehicles
. . **Dornier paraglider rocket vehicle**
. sounding rockets
. . **Dornier paraglider rocket vehicle**
RT liquid propellant rocket engines

dorsal sections
RT anatomy
posterior sections

dosage
UF *dose*
GS **dosage**
. radiation dosage
. sublethal dosage
RT biological effects
dosimeters
drugs
radiation measurement

dose
USE **dosage**

dosimeters
DEF Instruments for measuring the ultraviolet in solar and sky radiation. Devices worn by persons working around radioactive material, which indicate the dose of radiation to which they have been exposed. Used for dosimetry.
UF dosimetry
GS measuring instruments
. radiation measuring instruments
. . radiation detectors
. . . **dosimeters**
. . . . threshold detectors (dosimeters)
RT actinometers
dosage
exposure
flux (rate)
flux density
Geiger counters
ionization chambers
irradiation
neutron counters
nuclear emulsions
photographic measurement
proportional counters
radiant flux density
radiation counters
radiation dosage
radiation effects
radiation hazards
radiation measurement
radiobiology

dosimetry
USE **dosimeters**

double base propellants
DEF Solid rocket propellants using two unstable compounds, such as nitrocellulose and nitroglycerin. The unstable compounds used in a double based propellant do not require a separate oxidizer. Used for cordite.
UF *cordite*
GS propellants
. **double base propellants**
. . double base rocket propellants
RT cellulose nitrate
composite propellants
endothermic fuels
explosives
nitroglycerin
plastisols
pyrotechnics

double base rocket propellants
GS gels
. **double base rocket propellants**
propellants
. double base propellants
. . **double base rocket propellants**
. rocket propellants
. . solid rocket propellants
. . . **double base rocket propellants**
. solid propellants
. . solid rocket propellants
. . . **double base rocket propellants**
RT cellulose nitrate
composite propellants
explosives
nitroglycerin

double cusps
UF *cocuspitons*
GS geometry
. cusps (mathematics)
. . **double cusps**
RT∞ cusps

double precision arithmetic
GS number theory
. arithmetic
. . **double precision arithmetic**
RT arithmetic and logic units
∞ numbers

double sideband transmission
GS transmission

. electromagnetic wave transmission
. . radio transmission
. . . **double sideband transmission**
. signal transmission
. . radio transmission
. . . **double sideband transmission**
RT modulation
sidebands
single sideband transmission
television transmission
wave propagation

double stars
DEF Stars which appear as single points of light to the eye but which can be resolved into two points by a telescope. A double star is not necessarily a binary, a two star system revolving about a common center, but may be an optical double, two unconnected stars in the same line of sight.
GS celestial bodies
. stars
. . **double stars**
. . . binary stars
. . . . cataclysmic variables
. . . . companion stars
. . . . . Nemesis (star)
. . . . eclipsing binary stars
. . . . . dwarf novae
. . . . . Lambda Tauri stars
. . . . . Zeta Aurigae star
. . . . Sigma Orionis
. . . . symbiotic stars
. . . . x ray binaries
RT astrometry
stellar motions

doughnut shape wheels
USE **toroidal wheels**

Douglas aircraft
GS McDonnell Douglas aircraft
Douglas aircraft
. . A-1 aircraft
. . A-3 aircraft
. . A-4 aircraft
. . B-66 aircraft
. . C-9 aircraft
. . C-47 aircraft
. . C-54 aircraft
. . C-118 aircraft
. . C-124 aircraft
. . C-133 aircraft
. . D-558 aircraft
. . DC 3 aircraft
. . DC 7 aircraft
. . DC 8 aircraft
. . DC 9 aircraft
. . DC 10 aircraft
. . PD-808 aircraft
. . X-3 aircraft
RT∞ aircraft

Douglas D-558 aircraft
USE **D-558 aircraft**

Douglas DC-3 aircraft
USE **DC 3 aircraft**

Douglas DC-7 aircraft
USE **DC 7 aircraft**

Douglas DC-8 aircraft
USE **DC 8 aircraft**

Douglas DC-9 aircraft
USE **DC 9 aircraft**

Douglas PD-808 aircraft
USE **PD-808 aircraft**

DOVAP
USE **Doppler effect**

down-converters
GS frequency converters
. **down-converters**
RT∞ converters
frequency dividers

downbursts
(added March 1991)
GS storms
. storms (meteorology)
. . **downbursts**
. . . microbursts (meteorology)
RT aviation meteorology
flight hazards
thunderstorms
vertical air currents
wind shear

downlinking
DEF The transmission of signals (data, information, etc.) from satellites to ground terminals.
RT carrier to noise ratios
communication satellites
frequency reuse
ground stations
microwave transmission
satellite transmission
transmission efficiency
uplinking

downrange
DEF The airspace extending downstream on a given rocket test range.
RT ballistic ranges
ballistic trajectories
flight tests
impact prediction
missile ranges
recovery zones
test ranges
touchdown
trajectories

Downrange Antimissile Measurement Program
UF *DAMP program*
GS programs
. **Downrange Antimissile Measurement Program**
RT∞ measurement

downrange measurement
RT∞ measurement
test ranges

downtime
DEF A period during which equipment is not operating correctly because of machine failure.
GS time
. **downtime**
RT **failure**
inventory management
logistics
maintenance
malfunctions
MTBF
reliability
spare parts
system failures
turnaround (STS)

downwash
RT backwash
∞ draft
ground effect (aerodynamics)
helicopter wakes
lift augmentation
peripheral jet flow
upwash
wakes

DPCM (modulation)
USE **differential pulse code modulation**

Draconid meteoroids
GS celestial bodies
. meteoroid showers
. . **Draconid meteoroids**
. meteoroids
. . **Draconid meteoroids**
RT Giacobini-Zinner comet

∞ **draft**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT boundary layers
downwash
draft (gas flow)
drafting (drawing)
upwash
wakes

draft (gas flow)
RT∞ draft
flues
ventilation

drafting (drawing)
RT∞ draft
∞ drawing
drawings
graphic arts

drafting machines
RT computer aided design
∞ design
∞ machinery

drag
DEF A retarding force acting upon the direction of motion of the body. It is a component of the total fluid forces acting on the body. Used for drag effect.
UF *drag effect*
GS dynamic characteristics
. **drag**
. . electrostatic drag
. . friction drag
. . . aerodynamic drag
. . . . supersonic drag
. . . viscous drag
. . induced drag
. . minimum drag
. . pressure drag
. . . supersonic drag
. . . wave drag
. . . . interference drag
. . satellite drag
RT aerodynamic configurations
aerodynamics
boundary layers
∞ drag coefficients
drag measurement
friction
gravitation
ground effect (aerodynamics)
lift
skin friction

wakes

drag balance
USE aerodynamic balance
lift drag ratio

drag chutes
UF drogue parachutes
GS brakes (for arresting motion)
. aerodynamic brakes
. . drag chutes
drag devices
. aerodynamic brakes
. . drag chutes
parachutes
. drag chutes
RT aircraft brakes
airdrops
ballutes
ribbon parachutes
towed bodies

∞ drag coefficients
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The ratios of drag to the products of dynamic pressures and reference areas.
RT aerodynamic coefficients
aerodynamic drag
drag
hydrodynamic coefficients

drag devices
UF dragulators
GS drag devices
. aerodynamic brakes
. . ballutes
. . drag chutes
. . split flaps
. . wing flaps
. . . . leading edge flaps
. . . . leading edge slats
. . . . trailing edge flaps
. . . . vortex flaps
. spoilers
RT abort apparatus
aircraft brakes
boundary layer control
brakes (for arresting motion)
control surfaces
flaps (control surfaces)
lift devices
skin friction
vortex alleviation

drag effect
USE drag

drag force anemometers
DEF Instruments for measuring both the static and dynamic velocity head and flow in high frequency, unsteady flow.
GS measuring instruments
. anemometers
. . drag force anemometers
RT flow measurement
∞ instruments
velocity measurement

drag measurement
GS mechanical measurement
. drag measurement
RT aerodynamic drag
drag
electrostatic drag
flow measurement
∞ measurement
measuring instruments

drag reduction
RT aerodynamic drag
fluid flow
friction
induced drag
lift drag ratio
∞ reduction
riblets
winglets

dragulators
USE brakes (for arresting motion)
drag devices

drainage
UF draining
runoffs
RT ∞ discharge
evacuating (vacuum)
excavation
flood control
hydrology
hydrology models
irrigation
liquid wastes
mines (excavations)
permeability
∞ pumping
seepage
sewers
sumps
tunneling (excavation)
waste disposal
water flow
water runoff
water tables

drainage patterns
UF dendritic drainage
interlacing drainage
radial drainage patterns
rectangular drainage
RT arroyos
dunes (landforms)
flood damage
hydrology
irrigation
Mississippi River (US)
∞ patterns
precipitation (meteorology)
tributaries
water erosion
water flow
watersheds

draining
USE drainage

∞ drawing
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bundle drawing
cold drawing
drafting (drawing)
drawings
extruding
layouts
metal drawing
pulling
records
stretch forming
stretching
tempering

drawings
UF elevations (drawings)
GS documents
. drawings
. . engineering drawings
. . . . blueprints
RT charts
∞ cross sections
diagrams
dimensions
drafting (drawing)
∞ drawing
graphic arts
inks
layouts
∞ plans
∞ projection
representations
reproduction (copying)
specifications
∞ tracing
visual aids

DRC (capsule)
USE Discoverer recovery capsules

dreams
RT rapid eye movement state
sleep

dredged materials
DEF Sand, mud, silt, gravel, etc., recovered from the bottoms of harbors, canals, etc., during dredging operations.
RT channel flow
∞ channels
∞ materials
sediments

dredging
DEF Mechanical or hydraulic excavation of underwater materials. Used in maintaining and building of channels and ports as well as underwater mining of sand, gravel, and minerals.
RT artificial harbors
harbors
mineral deposits
mining
underwater resources

∞ drift
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT deviation
divergence
drift (instrumentation)
drift rate
flight paths
ionospheric drift
stability

drift (instrumentation)
UF instrument drift
RT accuracy
circuit reliability
∞ drift
drift rate
dynamic stability
errors
instrument errors
static stability
tolerances (mechanics)

drift rate
DEF The amount of drift,in any of its several senses, per unit time. Drift rate has many specific meanings in different fields. The type of drift rate should always be specified.
GS rates (per time)
. drift rate
RT ∞ drift
drift (instrumentation)

ionospheric drift
mobility
orbit perturbation
orbital mechanics
rotating plasmas
stability
trajectory control

drill bits
GS cutters
. drill bits
tools
. drill bits
RT bits
drilling
drills

drilling
GS drilling
. laser drilling
RT boreholes
core sampling
cutting
drill bits
drills
exploration
machining
micromachining
natural gas exploration
offshore energy sources
oil exploration
oil fields
penetration
perforating
piercing
tunneling (excavation)
wells

drills
GS cutters
. drills
tools
. drills
RT boring machines
compressed air
drill bits
drilling
machine tools
taps

drinking
GS ingestion (biology)
. drinking
RT beverages
swallowing

∞ drives
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT mechanical drives
motivation
propulsion
sex
sleep
wind tunnel drives

drogue parachutes
USE **drag chutes**

drogues
USE **towed bodies**

drone aircraft
DEF Remotely controlled aircraft. Used for drone helicopters.
UF drone helicopters
GS drone vehicles
. drone aircraft
. . target drone aircraft
. . . Firebee 2 target drone aircraft
. . . Jindivik target aircraft
pilotless aircraft
. drone aircraft
. . target drone aircraft
. . . Firebee 2 target drone aircraft
. . . Jindivik target aircraft
RT ∞ aircraft
anti-submarine warfare aircraft
DAST program
light aircraft
∞ military aircraft
oblique wings
remotely piloted vehicles
research aircraft
V/STOL aircraft

drone helicopters
USE **drone aircraft**
helicopters

drone vehicles
GS **drone vehicles**
. drone aircraft
. . target drone aircraft
. . . Firebee 2 target drone aircraft
. . . Jindivik target aircraft
RT ∞ military aircraft
pilotless aircraft
Sandpiper target missile
∞ vehicles
∞ winged vehicles

Drones for Aerodynamic and Struct Test
USE **DAST program**

drooped airfoils
DEF A baseline airfoil with an abrupt change in cross-section at about midspan from the fuselage. The outboard portion of the wing has a cross-section with a nearly flat bottom and a drooped (downward) leading edge in relation to the inboard baseline wing.
GS aerodynamic configurations
. drooped airfoils
aircraft configurations
. drooped airfoils
airfoils
. drooped airfoils
RT body-wing configurations
wing roots
wings

∞ drop
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT drops (liquids)
gradients

drop calorimeters
GS measuring instruments
. calorimeters
. . drop calorimeters
RT bomb calorimeters
flame calorimeters
heat measurement
high temperature tests
temperature measuring instruments

drop size
DEF The diameter of a drop if it is approximately spherical; otherwise, the approximate shape and appropriate dimensions must be described.
RT cloud physics
clouds (meteorology)
condensates
condensing
fog
humidity
hydrogen clouds
nucleation
particle diffusion
particle size distribution
∞ precipitation
precipitation particle measurement
raindrops
size distribution

drop tests
UF drop weight tests
RT Charpy impact test
destructive tests
impact testing machines
impact tests
notch tests
shock tests
∞ tests

drop towers
DEF Large devices for low gravity processing of molten material which consist of either a capsule which is dropped, or a drop tube where containerless low gravity studies are conducted or both. Used for drop tubes.
UF drop tubes
RT falling spheres
gravitational effects
low gravity manufacturing
microgravity
weightlessness

drop transfer
GS transferring
. drop transfer
RT arc melting
arcjets
plasma jets
refining

drop tubes
USE **drop towers**

drop weight tests
USE **drop tests**

dropouts
DEF Discrete variations in signal levels during the reproduction of recorded data which result in data reduction errors.
RT circuit breakers
electric contacts
electric switches
switches

drops (liquids)
DEF Small bodies of liquid held together primarily by surface tension. Used for liquid drops.
UF liquid drops
GS particles
. drops (liquids)
. . raindrops
RT air pollution
condensation nuclei
condensing
∞ drag
hydrometeors
sprayers

dropsondes
DEF Radiosondes equipped with a parachute, dropped from an aircraft to transmit measurements of atmospheric conditions as it descends.
GS measuring instruments
. meteorological instruments

. . dropsondes
. sondes
. . dropsondes
RT meteorological balloons
radiosondes
rawinsondes

Drosophila
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . Drosophila
RT chironomus flies

drought
UF drought conditions
RT arid lands
conservation
desertification
floods
hydrology
potable water
precipitation (meteorology)
water consumption
water management
water pollution
water reclamation

drought conditions
USE drought

drowsiness
USE sleep

drug therapy
USE chemotherapy

drugs
GS drugs
. adrenergics
. aminophylline
. anesthetics
. . chloroform
. . cyclopropane
. . methyl chloride
. . novocain
. antiadrenergics
. antibiotics
. . actinomycin
. . penicillin
. . pleuromin
. . streptomycin
. . tetracyclines
. anticonvulsants
. antidiuretics
. antidotes
. antiemetics and antinauseants
. antihistamines
. . dimenhydrinate
. . diphenyl hydantoin
. . promethazine
. antihypertensive agents
. antiinfectives and antibacterials
. antiradiation drugs
. . cysteamine
. central nervous system depressants
. cholinergics
. . anticholinergics
. cortisone
. cystaine
. decongestants
. digitalis
. epinephrine
. . norepinephrine
. ergotamine
. hemostatics
. histamines
. insulin
. methamphetamine
. motion sickness drugs
. muscle relaxants
. narcotics
. . morphine
. Nembutal (trademark)
. pentobarbital sodium
. . reserpine
. psycholeptic drugs
. . marijuana
. sedatives
. stimulants
. . atropine
. . caffeine
. . central nervous system stimulants
. . noradrenaline
. . norepinephrine
. tranquilizers
. trinitrophenol
. vasoconstrictor drugs
. . hypertensin
. . serotonin
RT alkaloids
analgesia
anesthesiology
bioflavonoids
biotin
chemical defense
chemotherapy
cures
dopamine
dosage
ethers
∞ medicine
pentobarbital
pharmacology
phenobarbital
psychopharmacology
quinoline
salicylates
sublethal dosage
thiophenes
vaccines
vitamins

drumlins
USE glacial drift

∞ drums
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT∞ barrels
∞ cylinders
drums (containers)
magnetic drums
magnetic storage

drums (containers)
SN (EXCLUDE MAGNETIC COMPUTER MEMORIES)
RT barrels (containers)
∞ buckets
cans
∞ containers
∞ cylinders
∞ drums
tanks (containers)

dry cells
GS electric generators
. direct power generators
. . primary batteries
. . . dry cells
. . . . magnesium cells
. . . . nickel zinc batteries
electrochemical cells
. electric batteries
. . primary batteries
. . . dry cells
. . . . magnesium cells
. . . . nickel zinc batteries
RT metal air batteries
nickel cadmium batteries
storage batteries
thermal batteries

dry friction
GS friction
. dry friction
RT abrasion
kinetic friction
sliding friction
static friction

dry heat
GS heat
. dry heat
RT geothermal resources
geothermal technology
high temperature environments
humidity
ovens

drydocks
RT∞ ports
sea launching

dryers (equipment)
USE drying apparatus

drying
UF desiccation
dewatering
GS drying
. dehumidification
. dehydration
. freeze drying
RT∞ absorption
baking
concentrating
curing
desaturation
dewatering
diffusion
enthalpy
evaporation
firing (ignition)
roasting
∞ separation
silica gel
water loss

drying apparatus
UF *dryers (equipment)*
GS separators
. drying apparatus
. . desiccators
RT absorbers (equipment)
columns (process engineering)
condensers (liquefiers)
dehydrated food
evaporators
furnaces

DSIF (instrumentation facility)
USE Deep Space Instrumentation Facility

DSN (space network)
USE Deep Space Network

DSN helicopter
USE CH-46 helicopter

DSSSL
USE document markup languages

DTA (analysis)
USE thermal analysis

DTL integrated circuits
UF *Diode-Transistor-Logic integ circuits*
GS circuits
. integrated circuits
. . DTL integrated circuits
RT electronic packaging
large scale integration
microminiaturization
molecular electronics
transistor circuits

DTMB-111 ground effect machine
USE ground effect machines

DTMB-400 ground effect machine
USE ground effect machines

Dual Air Density Explorer
UF *DAD Explorer*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Dual Air Density Explorer

dual frequency radar
USE multispectral radar

dual mode propulsion
USE hybrid propulsion

dual spin spacecraft
RT OSO-7
∞ spacecraft
spacecraft stability
spin stabilization

dual thrust nozzles
GS rocket nozzles
. dual thrust nozzles
RT ∞ nozzles
thrust

dual wing configurations
DEF A configuration of two wings of nearly the same planform and area, one behind the other.
RT biplanes
joined wings
tandem wing aircraft
wings

duality principle
DEF Principle that for any theorem in electric circuit analysis there is a dual theorem in which quantities are replaced with dual quantities. Examples are current and voltage or impedance and admittance.
RT ∞ analyzing
circuits
equivalent circuits
network analysis
∞ paths
∞ principles
signal flow graphs

duality theorem
DEF Theorem which states that if either of two dual linear programming problems has a solution, then so does the other.
GS theorems
. duality theorem
RT homology
isomorphism
∞ mathematics
∞ relationships

duct geometry
DEF The shape and dimensions of ports or other openings designed for passage of fluids (gases, liquids, or mixtures) in or external to engines.
GS geometry
. duct geometry
RT air flow
annular ducts
circular tubes
dump combustors
fluid flow
intake systems
openings
spatial marching

ducted bodies
RT annular ducts
axisymmetric bodies
bluff bodies
blunt bodies
∞ bodies
ducts
intake systems
nacelles
nose inlets
shrouds
slender bodies
two dimensional bodies

ducted fan engines
DEF Aircraft engines incorporating a fan or propeller enclosed in a duct, especially jet engines in which an enclosed fan or propeller is used to ingest ambient air to augment the gases of combustion in the jetstream.
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . ducted fan engines
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . ducted fan engines
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . ducted fan engines
RT turbofan engines

ducted fans
DEF Fans enclosed in ducts.
RT blowers
fan blades
∞ fans
lift fans
propeller fans
ring wings
shrouded propellers
turbofans
ventilation fans

ducted flow
GS fluid flow
. internal flow
. . ducted flow
. . . Knudsen flow
RT air flow
cavity flow
channel flow
choked flow
corner flow
dump combustors
flow geometry
fuel flow
heat transmission
wall flow

ducted propellers
USE shrouded propellers

ducted rocket engines
GS engines
. rocket engines
. . ducted rocket engines
RT booster rocket engines
∞ hybrid rocket engines
internal combustion engines
liquid propellant rocket engines
restartable rocket engines
solid propellant rocket engines
sustainer rocket engines

ductile-brittle transition
(added February 1994)
SN (INCLUDES BOTH DUCTILE-TO-BRITTLE AND BRITTLE-TO-DUCTILE TRANSITIONS)
UF *brittle-ductile transition*
RT brittleness
ductility
fracture strength
plastic deformation
∞ transition
transition temperature
yield strength

ductility
GS mechanical properties
. ductility
RT brittleness
compressive strength
creep properties
ductile-brittle transition
elongation
fatigue (materials)
flattening
fractography
fracture strength
hardness
impact strength
malleability
metal drawing
notch strength
plastic properties
shear properties
softness
stress relaxation
stretching
temper (metallurgy)
tensile strength
toughness
Tresca flow
weldability

ducts
DEF Specifically, tubes or passages that confine and conduct fluids, as passages for the flow of air to compressors of gas turbine engines, or pipes leading air to superchargers.
GS ducts
. acoustic ducts
. air ducts
. annular ducts
RT baffles
cavities
∞ channels
ducted bodies
exhaust systems
flues
intake systems

nose inlets
openings
orifices
outlets
pipes (tubes)
plenum chambers
ports (openings)
scoops
throats
∞ tubes
ventilation
vents
windows (apertures)

Duffing differential equation
GS algebra
. nonlinear equations
. . Duffing differential equation
analysis (mathematics)
. real variables
. . differential equations
. . . Duffing differential equation
. . nonlinear equations
. . . Duffing differential equation
RT ∞ equations
probability theory

dufrenite
USE kusiite

dummies
RT decoys
models
simulators

dummy loads
USE impedance
loading
output

dump combustors
DEF Combustors having a means of reducing flow velocity and forming recirculation zones through the sudden enlargement area between the inlet duct and the combustion chamber.
GS combustion chambers
. dump combustors
RT combustible flow
combustion efficiency
duct geometry
ducted flow
engine parts
flame holders
flow velocity
inlet flow
ramjet engines
rocket engines

dumping
RT disconnect devices
disposal
ejection
emptying
expulsion
jettisoning
materials handling
oil slicks
releasing
spilling
spreading
unloading

Dunaliella
GS plants (botany)
. algae
. . Dunaliella

dunes
DEF Low mounds, ridges, banks, or hills of loose, windblown granular material, usually sand, capable of movement. Used for barchans, coastal dunes, and sand dunes.
UF barchans
coastal dunes
sand dunes
GS landforms
. dunes
RT beaches
coasts
deserts
lagoons
Sahara Desert (Africa)
sands
topography
wind effects

Dungeys wind shear mechanism
USE wind shear

dunite
GS rocks
. igneous rocks
. . dunite
RT minerals
olivine
peridotite
soils

duochromators
RT electromagnetic radiation
∞ generators
light sources
measuring instruments
monochromators
radiation sources
spectrophotometers

duoplasmatrons
GS ion sources
. plasmatrons
. . duoplasmatrons
plasma generators
. plasmatrons
. . duoplasmatrons
RT electric discharges
ion propulsion
plasma propulsion
plasmas (physics)
sputtering

duplex operation
DEF The operation of associated transmitting and receiving apparatus in which the processes of transmission and reception are concurrent.
RT ∞ metallurgy
phase shift circuits
switching circuits

duplexers
DEF Devices which permit a single antenna system to be used for both transmitting and receiving. Duplexers should not be confused with diplexers, devices permitting an antenna system to be used simultaneously or separately by two transmitters.
RT circuits
circulators (phase shift circuits)
magic tees
monopulse radar
receivers
switching circuits
transmitters

duplicating
USE reproduction (copying)

durability
RT aircraft survivability
corrosion
cumulative damage
damage
degradation
deterioration
∞ endurance
life (durability)
long term effects
mechanical properties
∞ physical properties
quality
reliability
∞ resistance
ruggedness
stability
vulnerability
wear

duration
USE time

durene
GS organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . durene
. hydrocarbons
. . cyclic hydrocarbons
. . . durene

dust
DEF An imprecise term referring to particulates capable of temporary suspension in air or other gases – also particles smaller than an arbitrary selected size.
GS particles
. dust
. . cosmic dust
. . . interplanetary dust
. . . . meteroid dust clouds
. . . . zodiacal dust
. . lunar dust
. . terrestrial dust belt
RT aerosols
air pollution
Aitken nuclei
cleaning
∞ clouds
combustion products
contaminants
dirt
∞ dispersion
dispersions
fumes
particulates
pollen
powder (particles)
R Coronae Borealis stars
sands
smoke
space debris

dust collectors
GS accumulators
. dust collectors
separators
. dust collectors
RT air filters
electrostatic precipitators
exhaust systems
precipitators

dust storms
GS storms
. storms (meteorology)

... dust storms
RT atmospheric electricity
atmospheric physics
Mars (planet)
Mars environment
Mars surface
wind effects

dwarf galaxies
DEF Galaxies with low luminosity.
GS celestial bodies
. galaxies
... dwarf galaxies
RT local group (astronomy)

dwarf novae
DEF Short period binary systems in which a red quasi-main sequence star fills its Roche lobe and transfers matter, via an accretion disk, onto a white dwarf.
GS celestial bodies
. stars
... double stars
.... binary stars
..... eclipsing binary stars
..... dwarf novae
... main sequence stars
.... dwarf stars
..... dwarf novae
... variable stars
.... novae
..... dwarf novae
RT Hercules nova
stellar mass accretion
stellar mass ejection
white dwarf stars

dwarf stars
GS celestial bodies
. stars
... main sequence stars
.... dwarf stars
..... dwarf novae
..... flare stars
..... red dwarf stars
RT brown dwarf stars
cataclysmic variables
F stars
G stars
K stars
late stars
Nemesis (star)
subdwarf stars
subgiant stars
white dwarf stars

dwell
RT delay
ignition systems
timing devices

dyadics
GS algebra
. polynomials
... dyadics
RT vectors (mathematics)

dye lasers
GS stimulated emission devices
. lasers
... organic lasers
.... dye lasers
RT dyes
infrared lasers
laser outputs
liquid lasers
optical communication
rhodamine
tuning
two-wavelength lasers

dyes
GS dyes
. methylene blue
. rhodamine
. thiazine (trademark)
RT acriflavine
aniline
anthraquinones
azines
azo compounds
chromophores
dye lasers
∞ markers
methylene
phenanthrene
stilbene

Dyna-Soar space glider
USE X-20 aircraft

dynamic characteristics
UF *dynamic properties*
GS dynamic characteristics
. drag
... electrostatic drag
... friction drag
.... aerodynamic drag
..... supersonic drag
.... viscous drag
... induced drag
... minimum drag
... pressure drag
.... supersonic drag
.... wave drag
..... interference drag
... satellite drag
. dynamic pressure
. dynamic stability
... combustion stability
.... flame stability
... control stability
... frequency stability
... motion stability
.... aerodynamic stability
.... aircraft stability
..... hovering stability
.... attitude stability
..... directional stability
..... gyroscopic stability
.... lateral stability
.... longitudinal stability
.... flow stability
..... boundary layer stability
..... flame stability
..... magnetohydrodynamic stability
..... Wobbe instability
.... low speed stability
.... rotary stability
..... gyroscopic stability
.... spacecraft stability
... gravitational instability
. flow characteristics
... flow distribution
... flow stability
.... boundary layer stability
.... flame stability
.... magnetohydrodynamic stability
..... Wobbe instability
... flow velocity
.... solar wind velocity
. lift
... interference lift
... jet lift
... rotor lift
... zero lift
. transient response
RT accuracy
aerodynamic balance
aerodynamic characteristics
amplification
automatic control
automatic control valves
bandwidth
∞ characteristics
∞ control
damping
distribution (property)
dynamic range
∞ dynamics
∞ equilibrium
errors
frequency response
hysteresis
impedance
linearity
ocean dynamics
precision
∞ properties
range (extremes)
reaction time
reliability
remote control
resolution
resonant frequencies
rotor dynamics
sensitivity
stability
time constant
transfer functions

dynamic control
GS automatic control
. dynamic control
RT adaptive control
aeroservoelasticity
∞ control
control theory
∞ dynamics
feedback control
inverse kinematics
model reference adaptive control
robot control
robot dynamics

dynamic loads
DEF Loads imposed by dynamic action, as distinguished from a static load. Specifically, with respect to aircraft, rockets, or spacecraft, a load due to an acceleration of craft, as imposed by gusts, by maneuvering, by landing, by firing rockets, etc.
GS loads (forces)
. dynamic loads
... aerodynamic loads
.... blast loads
.... gust loads
... cyclic loads
... rolling contact loads
... thrust loads
... transient loads
.... gust loads
.... impact loads
.... landing loads
.... shock loads
..... blast loads
... variable amplitude loading
... vibratory loads
... wing loading
RT axial compression loads
axial loads

compression loads
critical loading
∞ dynamics
edge loading
gas-solid interactions
NASTRAN
random loads
static loads
structural design criteria
transverse loads
wind pressure

dynamic models
DEF Models of aircraft or other objects having their linear dimensions and weight and moments of inertia reproduced in scale in proportion to the original.
GS models
. dynamic models
RT aircraft models
biological models (mathematics)
bond graphs
∞ dynamics
large eddy simulation
mathematical models
ocean models
Pitot rods
powered models
similarity theorem
spacecraft models
static models
systems simulation
wind tunnel models

dynamic modulus of elasticity
GS mechanical properties
. elastic properties
. . modulus of elasticity
. . . dynamic modulus of elasticity
RT ∞ dynamics
ultrasonic tests

dynamic pressure
DEF The pressure of a fluid resulting from its motion, equal to one-half the fluid density times the fluid velocity squared; in incompressible flow, dynamic pressure is the difference between total pressure and static pressure.
GS dynamic characteristics
. dynamic pressure
pressure
. dynamic pressure
RT blast loads
contact loads
∞ dynamics
impact loads
kinetic theory
overpressure
Riemann waves

dynamic programming
GS optimization
. mathematical programming
. . dynamic programming
research
. dynamic programming
RT ∞ applications of mathematics
Bellman theory
constraints
critical path method
decision theory
∞ dynamics
formalism
linear programming
mathematical models
nonlinear systems
operations research
∞ programming
steepest descent method

dynamic properties
USE dynamic characteristics

dynamic range
(added August 1991)
SN (LIMITED TO SIGNAL DETECTION/MODULATION)
DEF The range of a signal detector or transmitter, between the smallest and largest detectable signal levels which can be detected without inducing changes in its gain characteristics; usually expressed in decibels.
GS ranges (extremes)
. dynamic range
RT amplification
amplifiers
dynamic characteristics
equipment specifications
frequency ranges
frequency response
microchannel plates
modulation
ratios
signal detection
signal to noise ratios

dynamic response
GS responses
. dynamic response
. . transient response
RT aeroservoelasticity
amplification
damping
∞ dynamics
flow orientation
frequency response
impedance
modal response
parameter identification
ramp functions
reaction time
response bias
rotor dynamics
sensitivity
step functions
stinking tests
system identification
time orientation
transfer functions

dynamic stability
DEF The characteristics of a body, such as an aircraft or rocket, that causes it, when disturbed from an original state of steady flight or motion, to damp the oscillations set up by restoring moments and gradually return to its original state; specifically, the aerodynamic characteristics.
GS dynamic characteristics
. dynamic stability
. . combustion stability
. . . flame stability
. . control stability
. . frequency stability
. . motion stability
. . . aerodynamic stability
. . . aircraft stability
. . . . hovering stability
. . . attitude stability
. . . . directional stability
. . . . . gyroscopic stability
. . . . lateral stability
. . . . longitudinal stability
. . . flow stability
. . . . boundary layer stability
. . . . flame stability
. . . . magnetohydrodynamic stability
. . . . Weibel instability
. . . low speed stability
. . . rotary stability
. . . . gyroscopic stability
. . . spacecraft stability
. . gravitational instability
stability
. dynamic stability
. . combustion stability
. . . flame stability
. . control stability
. . frequency stability
. . motion stability
. . . aerodynamic stability
. . . aircraft stability
. . . . hovering stability
. . . attitude stability
. . . . directional stability
. . . . . gyroscopic stability
. . . . lateral stability
. . . . longitudinal stability
. . . flow stability
. . . . boundary layer stability
. . . . flame stability
. . . . magnetohydrodynamic stability
. . . . Weibel instability
. . . low speed stability
. . . rotary stability
. . . . gyroscopic stability
. . . spacecraft stability
. . gravitational instability
RT coning motion
counterbalances
damping
dimensional stability
drift (instrumentation)
∞ dynamics
horizontal orientation
missing mass (astrophysics)
resonant vibration
rotor dynamics
spacecraft motion
stable oscillations
static stability
surface stability
systems stability
transient response
vertical orientation

dynamic structural analysis
UF structural dynamics
GS structural analysis
. dynamic structural analysis
. . flutter analysis
RT aeroservoelasticity
∞ dynamics
flat plates
shock spectra

dynamic tests
RT aerodynamic stability
∞ dynamics
flight tests
low speed stability
motion stability
spin dynamics
spin tests
static tests
∞ tests
vibration tests

dynamical systems
RT attractors (mathematics)
control theory
mathematical models

nonlinear systems
systems simulation

∞ dynamics.
SN: (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF: Study of the motion of a system of material particles under the influence of forces, especially those which originate outside the system under consideration.
RT: aerodynamics
aerostatics
aerothermodynamics
astrodynamics
biodynamics
chiral dynamics
computational fluid dynamics
continuum mechanics
dynamic characteristics
dynamic control
dynamic loads
dynamic models
dynamic modulus of elasticity
dynamic pressure
dynamic programming
dynamic response
dynamic stability
dynamic structural analysis
dynamic tests
elastodynamics
electrodynamics
equations of motion
field theory (physics)
fluid dynamics
fluid mechanics
gas dynamics
geodynamics
group dynamics
Hamiltonian functions
hemodynamics
hydrodynamics
kinematics
kinetics
magnetohydrodynamics
∞ mechanics (physics)
molecular dynamics
momentum
momentum transfer
nutation
ocean dynamics
plasma dynamics
quantum chromodynamics
rarefied gas dynamics
resonant frequencies
resonant vibration
robot dynamics
rotor dynamics
spin dynamics
stabilizers (fluid dynamics)
statics
terradynamics
thermodynamics
variational principles
velocity
vibration

Dynamics Explorer 1 satellite.
DEF: A twin satellite of Dynamics Explorer 2 satellite designed to study the magnetosphere, ionosphere, and atmosphere coupling.
GS: artificial satellites
. scientific satellites
. . Explorer satellites
. . . Dynamics Explorer satellites
. . . . **Dynamics Explorer 1 satellite.**

Dynamics Explorer 2 satellite.
DEF: A twin satellite of Dynamics Explorer 1 satellite designed to study the magnetosphere, ionosphere, and atmosphere coupling.
GS: artificial satellites
. scientific satellites
. . Explorer satellites
. . . Dynamics Explorer satellites
. . . . **Dynamics Explorer 2 satellite.**

Dynamics Explorer satellites.
DEF: Two satellites that have been designed to occupy different orbits and supply comparative data for studying the boundary region between earth and space. Of the 24 goals of the program, one half require both satellite's data, one fourth one satellite's data and one fourth the other satellite's data. The satellites were launched together in August of 1981.
GS: artificial satellites
. scientific satellites
. . Explorer satellites
. . . **Dynamics Explorer satellites.**
. . . . Dynamics Explorer 1 satellite
. . . . Dynamics Explorer 2 satellite

dynamite.
GS: explosives
. **dynamite.**
RT: nitroglycerin

dynamo theory.
RT: Earth core
geomagnetism
solar convection (astronomy)
stellar convection
telluric currents
∞ theories

dynamometers.
DEF: Instruments for measuring power or force, specifically, instruments for measuring the power, torque, or thrust of aircraft engines or rockets. Used for electrodynamometers.
UF: **electrodynamometers**
GS: electric generators
. rotating generators
. . **dynamometers.**
measuring instruments
. **dynamometers.**
RT: ergometers
mechanical measurement
∞ test equipment
thrust measurement
torquemeters

dynamos
USE: **rotating generators.**

dynodes.
GS: electrodes
. **dynodes.**
RT: camera tubes
photomultiplier tubes
secondary emission

Dyson theory.
RT: Heisenberg theory
quantum mechanics
∞ theories

dyspnea.
DEF: Difficult or labored breathing.
GS: rates (per time)
. respiratory rate
. . **dyspnea.**
signs and symptoms
. **dyspnea.**

dysprosium.
GS: chemical elements
. rare earth elements
. . **dysprosium.**
. . . dysprosium isotopes
metals
. rare earth elements
. . **dysprosium.**
. . . dysprosium isotopes

dysprosium 161
USE: **dysprosium isotopes.**

dysprosium compounds.
GS: rare earth compounds
. **dysprosium compounds.**
RT ∞: chemical compounds
∞: metal compounds

dysprosium isotopes.
UF: **dysprosium 161**
GS: chemical elements
. nuclides
. . isotopes
. . . **dysprosium isotopes.**
. rare earth elements
. . **dysprosium**
. . . **dysprosium isotopes.**
metals
. rare earth elements
. . **dysprosium**
. . . **dysprosium isotopes.**

E

E glass
DEF: A low alkali lime borosilicate glass made into glass fiber filaments used in composite materials.
GS: glass
. E glass
. . S glass
RT: composite materials
glass fiber reinforced plastics
glass fibers
silicon dioxide

E layer
USE: E region

E region
SN: ALTITUDE RANGE BETWEEN APPROXIMATELY 85 AND 150 KM.
DEF: A portion of the ionosphere extending from about 90 to 150 km. In daylight, the maximum density has one maximum at about 105 km. and is dependent upon solar activity and the solar zenith angle. At night the E region nearly disappears except at high latitudes where particle precipitation can produce ionization at altitudes greater than those experienced under sunlight conditions.
UF: *E layer*
night E layer
GS: Earth atmosphere
. upper atmosphere
. . Earth ionosphere
. . . E region
. . . . D-1 layer
. . . . D-2 layer
. . . . sporadic E layer
regions
. E region
. . D-1 layer
. . D-2 layer
. . sporadic E layer
RT: lower ionosphere
upper ionosphere

D-1 layer
GS: Earth atmosphere
. upper atmosphere
. . Earth ionosphere
. . . E region
. . . . D-1 layer
regions
. E region
. . D-1 layer
RT: sporadic E layer

D-2 aircraft
UF: *Hawkeye aircraft*
WDF aircraft
GS: AWACS aircraft
. D-2 aircraft
Grumman aircraft
. D-2 aircraft
jet aircraft
. turboprop aircraft
. . D-2 aircraft
RT: aircraft
command and control
early warning systems
sa military aircraft
passenger aircraft
turboprop engines

D-2 layer
GS: Earth atmosphere
. upper atmosphere
. . Earth ionosphere
. . . E region
. . . . D-1 layer
regions
. E region
. . D-2 layer
RT: sporadic E layer

D-3A aircraft
GS: AWACS aircraft
. D-3A aircraft
Boeing aircraft
. D-3A aircraft
RT: aircraft
command and control
early warning systems
sa military aircraft

D-4A aircraft
UF: *AABNCP*
Advanced Airborne Command Post
Boeing 747B aircraft
GS: AWACS aircraft
. D-4A aircraft
Boeing aircraft
. D-4A aircraft
RT: aircraft
command and control
early warning systems
sa military aircraft

EAI 600 computer
GS: data processing equipment
. computers
. . analog computers
. . . EAI 600 computer
. . digital computers
. . . EAI 600 computer

EAI 8400 computer
GS: data processing equipment
. computers
. . digital computers
. . . EAI 8400 computer

EAI 8800 computer
GS: data processing equipment
. computers
. . digital computers
. . . EAI 8800 computer

ear
GS: anatomy
. sense organs
. . ear
. . . eardrums
. . . eustachian tubes
. . . labyrinth
. . . . cochlea
. . . . . Corti organ
. . . . cristh organs
. . . . semicircular canals
. . . . vestibules
. . . middle ear
RT: artificial ears
auditory perception
endolymph
hearing
labyrinthectomy
mastoids
otolaryngology
otology

ear pressure test
GS: physiological tests
. ear pressure tests
RT: middle ear pressure
pressure
vertigo
vestibular tests

ear protectors
GS: protectors
. ear plug inserts
RT: noise injuries
noise reduction

earthquakes
GS: seismic
. sense organs
. . ear
. . . eardrums
RT: eustachian tubes
middle ear pressure
semicircular canals

Early Apollo Surface Experiments Package
USE: EASEP

Early Bird satellites
GS: artificial satellites
. active satellites
. . SYNCOM satellites
. . . Early Bird satellites
. communication satellites
. . SYNCOM satellites
. . . Early Bird satellites
. synchronous satellites
. . SYNCOM satellites
. . . Early Bird satellites
RT: ATS
C-band program

early stars
GS: celestial bodies
. stars
. . early stars
. . . hot stars
. . . . A stars
. . . . B stars
. . . . . chell stars
. . . . . Sigma Orionis
. . . . blue stars
. . . . O stars
. . . . white dwarf stars
. . . . Wolf-Rayet stars
RT: late stars
main sequence stars
star formation

early warning systems
GS: warning systems
. early warning systems
. . Ballistic Missile Early Warning System
RT: air defense
AWACS aircraft
Cobra Dane (radar)
detection
E-2 aircraft
E-3A aircraft
E-4A aircraft
missile detection
over-the-horizon radar
radar targets
radar tracking
Synchronous Earth Observatory satellite
sa systems
warning

earphones
DEF Electroacoustic transducers operating from an electrical system to an acoustical system and intended to be closely coupled acoustically to the ear. Used for headsets.
UF headsets
GS audio equipment
earphones
RT acoustics
auditory perception
microphones
sound transmission
telephones

Earth & Ocean Physics Application Program
UF EOPAP
GS programs
NASA programs
NASA space programs
Earth & Ocean Physics Application Program
projects
Earth & Ocean Physics Application Program
space programs
NASA space programs
Earth & Ocean Physics Application Program
RT oceanography
xx research projects

Earth (planet)
DEF That planet of the solar system which is fifth in size of the 9 major planets, and third (between Venus and Mars) in order of distance from the sun (about 93 million miles). Major data for the Earth: equatorial radius: 6,378 kilometers (3,963.5 miles); polar radius: 6,357 kilometers (3,941 miles); equatorial circumference: 40,075 kilometers (24,902 miles).
UF world
GS celestial bodies
planets
terrestrial planets
Earth (planet)
RT asteroid collisions
Earth sciences
Eastern Hemisphere
geodesy
geoelectricity
geography
geology
geomagnetism
geophysics
xx globes
planetary crowns
polar caps
terrestrial radiation
Western Hemisphere

Earth albedo
GS albedo
Earth albedo
RT absorptance
cosmic ray albedo
Earth radiation budget
Earth radiation budget experiment
Ebert spectrometers
lunar albedo
reflectance
terrestrial radiation

Earth atmosphere
GS Earth atmosphere
chemosphere
free atmosphere
heterosphere
homosphere
lower atmosphere
troposphere
tropopause
middle atmosphere
mesosphere
mesopause
stratosphere
ozonosphere
stratopause
midlatitude atmosphere
primitive Earth atmosphere
upper atmosphere
Earth ionosphere
E region
E-1 layer
E-2 layer
sporadic E layer
lower ionosphere
D region
upper ionosphere
F region
F-1 region
F-2 region
exosphere
thermosphere
turbopause
RT acoustic sounding
aerospace environments
air
air pollution
air quality
argon
xx atmospheres
atmospheric circulation
atmospheric composition
atmospheric electricity
atmospheric entry
Atmospheric General Circulation Experiment
aurorae
biometeorology
Earth magnetosphere
environments
geopotential height
global air pollution
greenhouse effect
meteor trails
OPEN Project
planetary atmospheres
plasmasphere
radiation belts
satellite atmospheres
scale height
superrotation
teleconnections (meteorology)
weathering

Earth axis
DEF Any one of a set of mutually perpendicular reference axes established with the upright axis (the Z axis) pointing to the center of the Earth, used in describing the position or performance of an aircraft or other body in flight. The Earth axes may remain fixed or may move with the aircraft or other object.
GS axes (reference lines)
axes of rotation
Earth axis
RT Chandler wobble
coordinates
Earth orientation
geodesy
polar wandering (geology)

Earth core
GS cores
planetary cores
Earth core
lithosphere
Earth core
RT core-mantle boundary
dynamo theory
geophysical fluids
structural properties (geology)

Earth crust
UF crustal dynamics
GS crusts
planetary crusts
Earth crust
lithosphere
Earth crust
RT coasts
continental drift
core sampling
craters
crustal fractures
Earth mantle
earthquake damage
folds (geology)
lunar crust
massifs
plates (tectonics)
San Andreas Fault
sea floor spreading
sialsvella
structural properties (geology)

Earth cryosphere
(added June 1986)
DEF The part of the Earths surface that is perennially frozen -- the zone of the Earth where ice and frozen ground are formed.
RT air land interactions
air water interactions
xx cryospheres
ice environments
meteorology
permafrost
polar caps
snow cover

Earth currents
USE telluric currents

Earth Energy Budget Experiment
USE LIDSEE satellite

Earth environment
GS environments
Earth environment
RT air pollution
arid lands
desertification
magnetosphere

Earth figure
USE geodesy

Earth gravitation
GS gravitation
Earth gravitation
RT geomagnetism
geopotential
geopotential height
gravitational fields
gravity anomalies

Earth hydrosphere
DEF That part of the Earth that consists of the oceans, seas, lakes, and rivers. Used for hydrosphere (Earth).
UF hydrosphere (Earth)
RT biosphere
hydrological cycle

hydrology
lakes
limnology
oceans
seas

Earth Ionosphere
SN (ALTITUDES ABOVE APPROXIMATELY 50 KM)
GS Earth atmosphere
. upper atmosphere
. . Earth ionosphere
. . . E region
. . . . E–1 layer
. . . . E–2 layer
. . . . sporadic E layer
. . . lower ionosphere
. . . . D region
. . . upper ionosphere
. . . . F region
. . . . . F 1 region
. . . . . F 2 region
RT atmospheric ionization
chemosphere
CRRES (satellite)
Earth magnetosphere
Earth–ionosphere waveguide
electrojets
exosphere
field aligned currents
heterosphere
homosphere
Intasat satellite
ion concentration
ion density (concentration)
∞ ionospheres
ionospheric propagation
ionospheric storms
∞ layers
magnetosphere–ionosphere coupling
mesosphere
middlatitude atmosphere
regions
satellite atmospheres
shear layers
thermosphere

Earth limb
GS planetary limb
. Earth limb
RT astronomy
libration
∞ limbs

Earth magnetosphere
GS environments
. Earth magnetosphere
. . geomagnetic tail
. . magnetopause
. . magnetosheath
RT AMPTE (satellites)
barium ion clouds
Chapman–Ferraro problem
Cluster Mission
corotation
CRRES (satellite)
Earth atmosphere
Earth ionosphere
exosphere
field aligned currents
geomagnetic hollow
gyromagnetism
GEOS satellites (ESA)
heterosphere
International Magnetospheric Explorer
International Magnetospheric Study
Kp index
magnetic fields
magnetosphere–ionosphere coupling
∞ magnetospheres
neutral sheets
OPEN Project
planetary magnetospheres
plasma clouds
plasmapause
plasmasphere
polar cusps
radiation belts
radiation trapping
satellite atmospheres
screen effect
solar planetary interactions
solar terrestrial interactions
solar wind velocity
space plasmas
thermosphere

Earth magnetotail
USE geomagnetic tail

Earth mantle
DEF The zone of the Earth below the crust and above the core (to a depth of 3480 km), which is divided into the upper mantle and the lower mantle, with a transition zone between. Used for mantle (Earth structure).
UF *mantle (Earth structure)*
GS lithosphere
. Earth mantle
planetary mantles
. Earth mantle
RT asthenosphere
coesite
core–mantle boundary
Earth crust
lunar mantle
plates (tectonics)
regolith
sea floor spreading
stishovite
structural properties (geology)
subduction (geology)

∞ **Earth motion**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Chandler wobble
Earth movements
Earth orientation
Earth rotation
polar wandering (geology)
solar orbits

Earth movements
GS Earth movements
. earthquakes
. landslides
RT avalanches
crevasses
crustal fractures
∞ Earth motion
earthquake damage
geodynamics
large aperture seismic array
sea floor spreading
seismic waves
seismology
tectonics
tsunami waves

Earth observations (from space)
DEF The acquisition of Earth surface data from aircraft or spacecraft.
GS observation
. Earth observations (from space)
. . satellite observation
RT aerial photography
data acquisition
Earth Observing System (EOS)
Earthnet
Feature Identification and Location Exper
International Geosphere–Biosphere program
Landsat satellites
multispectral band scanners
multispectral photography
photography
Shuttle Imaging Radar
SPOT (French satellite)

Earth Observing System (EOS)
DEF NASA's orbital multisensor observatory system for the long term acquisition of Earth sciences data to be operated in conjunction with an integrated ground-based science information system. This international system will become operational in 1995 when the first of four polar platforms will be launched. The first and third will be launched under U.S. auspices. The second under ESA auspices and the last under Japanese auspices.
UF *EOS*
RT Advanced Microwave Sounding Unit
Earth observations (from space)
EOS data and information system
information systems
Landsat 6
Landsat 7
Mission to Planet Earth
remote sensing
space platforms
space station payloads
space station polar platforms

Earth orbital environments
UF *GEO environments*
Geosynchronous Earth Orbital Environments
LEO environments
low Earth orbital environments
GS environments
. aerospace environments
. . Earth orbital environments
. extraterrestrial environments
. . Earth orbital environments
RT extraterrestrial radiation
low earth orbits
microgravity
spacecraft glow

Earth orbital rendezvous
UF *EOR (rendezvous)*
GS maneuvers
. orbital rendezvous
. . Earth orbital rendezvous
rendezvous
. space rendezvous
. . orbital rendezvous
. . . Earth orbital rendezvous
RT lunar orbital rendezvous
orbital mechanics
rendezvous trajectories
spacecraft trajectories
transfer orbits

Earth orbiting space stations
USE space stations

Earth orbits
SN (ORBITS AROUND THE EARTH)
GS orbits

Earth orbits
. . geosynchronous orbits
. . low earth orbits
. . twenty-four hour orbits
RT spogees
Apollo asteroids
circular orbits
circumlunar trajectories
elliptical orbits
equatorial orbits
Hansen lunar theory
Hill lunar theory
Hill method
lunar orbits
Near Earth Asteroid Rendezvous Mission
orbital lifetime
orbital mechanics
parking orbits
perigees
planetary orbits
polar orbits
satellite orbits
spacecraft orbits
stationary orbits
transfer orbits

Earth orientation
RT Chandler wobble
Earth axis
∞ Earth motion
Earth rotation
nutation
polar wandering (geology)
precession

Earth planetary structure
RT asthenosphere
continental drift
geology
geophysics
hydrology
lithosphere
oceanography
planetary composition
planetary structure
plates (tectonics)
primitive Earth atmosphere
structural properties (geology)
∞ structures
tectonics

Earth radiation
USE **terrestrial radiation**

Earth radiation budget
GS energy budgets
. **Earth radiation budget**
RT atmospheric heat budget
atmospheric radiation
∞ budgets
Earth albedo
Earth radiation budget experiment
heat budget
terrestrial radiation

Earth radiation budget experiment
DEF Radiation measurements to determine the spatial and temporal variations of the Earth's radiance. The measurements have continued for the past two decades beginning with Explorer 7 in 1959 and through Nimbus 6 and 7. Used for ERBE.
UF *ERBE*
GS payloads
. Space Shuttle payloads
. . **Earth radiation budget experiment**
RT albedo
Earth albedo
Earth radiation budget
∞ radiation
radiation measuring instruments
terrestrial radiation

Earth resources
GS resources
. **Earth resources**
. . forests
. . . rain forests
. . fossil fuels
. . . coal
. . . . anthracite
. . . . lignite
. . . . solvent refined coal
. . . crude oil
. . . natural gas
. . . . liquefied natural gas
. . . peat
. . glaciers
. . icebergs
. . kerogen
. . land ice
. . marine resources
. . oil fields
. . range resources
. . springs (water)
. . tar sands
. . thermal resources
. . . geothermal resources
. . . . geysers
. . underwater resources
. . water resources
. . . aquifers
RT **alfalfa**
arid lands
Baltic Shield (Europe)
bedrock
birds
brush (botany)
chaparral
coastal ecology
coastal plains
corn
cotton
crop growth
crop identification
deciduous trees
deserts
Earthnet
energy policy
energy technology
environment management
environment pollution
environmental surveys
EROS (satellites)
farm crops
farmlands
fishes
flats (landforms)
∞ food
forest management
geographic applications program
geothermal energy conversion
grains (food)
granite
grasslands
Great Basin (US)
Great Lakes (North America)
Great Salt Lake (UT)
ground water
habitats
hay
ice mapping
imagery
kettles (geology)
keys (islands)
land use
Large Area Crop Inventory Experiment
lava
leguminous plants
limestone
mammals
marshlands
millet
mineral deposits
minerals
Mississippi River (US)
NASA Interactive Planning System
oats
oceanography
photography
photomapping
plants (botany)
reconnaissance
regolith
remote sensing
remote sensors
resources management
rivers
rocks
rural land use
sands
sandstones
scanning
shales
soils
sorghum
spaceborne photography
spectral reconnaissance
SPOT (French satellite)
strip mining
sugar beets
sugar cane
sunflowers
surface water
surveillance
terrain analysis
thermal mapping
tidepower
timber identification
timber inventory
tributaries
vegetation
vineyards
waterwave energy
waterwave energy conversion
wharves
windpower utilization

Earth Resources Experiment Package
USE **EREP**

Earth Resources Information System
GS information systems
. **Earth Resources Information System**
RT data systems
EOS data and information system
NASA programs
programs
Skylab program
∞ systems

Earth Resources Observation Satellites
USE **EROS (satellites)**

Earth Resources Program
GS programs
. NASA programs
. . NASA space programs
. . . **Earth Resources Program**

. . . . . Earth Resources Survey Program
. . . . . SEASAT program
. space programs
. . NASA space programs
. . . Earth Resources Program
. . . . . Earth Resources Survey Program
. . . . . SEASAT program
RT Apollo applications program
change detection
geographic applications program
infrared radiometers
Large Area Crop Inventory Experiment
plant stress
satellite observation
Skylab program

Earth resources shuttle imaging radar
USE **Shuttle Imaging Radar**

Earth Resources Survey aircraft
RT aerial photography
aerial reconnaissance
∞ aircraft
photogeology
photoreconnaissance
reconnaissance aircraft

Earth Resources Survey Program
GS programs
. NASA programs
. . NASA space programs
. . . Earth Resources Program
. . . . . Earth Resources Survey Program
. . . . . SEASAT program
. space programs
. . NASA space programs
. . . Earth Resources Program
. . . . . Earth Resources Survey Program
. . . . . SEASAT program
RT Apollo applications program
Skylab program

Earth Resources Technology Satellite 1
USE **Landsat 1**

Earth Resources Technology Satellite B
USE **Landsat 2**

Earth Resources Technology Satellite C
USE **Landsat 3**

Earth Resources Technology Satellite D
USE **Landsat 4**

Earth Resources Technology Satellite E
USE **Landsat E**

Earth Resources Technology Satellite F
USE **Landsat F**

Earth Resources Technology Satellites
USE **Landsat satellites**

Earth rotation
GS gyration
. rotation
. . Earth rotation
RT Chandler wobble
∞ Earth motion
Earth orientation
sidereal time
superrotation

Earth sciences
(added December 1991)
RT atmospheric physics
Earth (planet)
ecology
geochemistry
geodynamics
geology
geomagnetism
geophysics
hydrodynamics
hydrology
meteorology
oceanography
seismology

Earth shape
USE **geodesy**

Earth surface
GS lithosphere
. Earth surface
RT craters
crustal fractures
equatorial regions
geodetic accuracy
marshlands
ocean surface
planetary surfaces
structural properties (geology)
∞ surfaces
terradynamics
topography

Earth terminal measurement system
DEF NBS system for measuring electromagnetic parameters of communication satellites and ground stations relative to antenna gain, ratio of carrier power to operating noise temperature, and satellite effective isotropic power.
RT communication satellites
electromagnetic measurement
electronic equipment tests
ground support equipment
∞ measurement
radio relay systems
∞ systems
∞ test equipment

Earth terminals
DEF Portable or stationary ground-based equipment used to transmit and receive signals and other data via satellites in communications networks.
GS stations
. ground stations
. . Earth terminals
RT carrier to noise ratios
communication equipment
radio relay systems
satellite communication
satellite transmission
spacecraft communication
television systems
VSAT (network)

Earth tides
GS tides
. Earth tides
RT atmospheric tides
lunar tides

Earth Viewing Applications Laboratory
UF *EVAL*
GS laboratories
. space laboratories
. . Earth Viewing Applications Laboratory
payloads
. Space Shuttle payloads
. . Earth Viewing Applications Laboratory
RT SAIL project

Earth-ionosphere waveguide
(added August 1991)
DEF A natural waveguide consisting of the atmospheric duct formed by the ionospheric D region and the surface of the Earth making possible long-range communications in the 100Hz frequency range.
GS waveguides
. Earth-ionosphere waveguide
RT D region
Earth ionosphere
ionospheric propagation
plasmaguides
radio transmission
very low frequencies

Earth-Mars trajectories
GS trajectories
. spacecraft trajectories
. . interplanetary trajectories
. . . Earth-Mars trajectories
RT elliptical orbits
Mars exploration
orbital mechanics
transfer orbits

Earth-Mercury trajectories
GS trajectories
. spacecraft trajectories
. . interplanetary trajectories
. . . Earth-Mercury trajectories
RT elliptical orbits
orbital mechanics
transfer orbits

Earth-Moon system
RT Charon
gravitational fields
gravitational waves
lunar retroreflectors
moon
natural satellites
orbital mechanics
solar system
∞ systems
two body problem

Earth-Moon trajectories
GS trajectories
. spacecraft trajectories
. . lunar trajectories
. . . Earth-Moon trajectories
RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
circumlunar trajectories
cislunar space
interplanetary trajectories
lunar flight
lunar orbits
moon-Earth trajectories
parking orbits
rendezvous trajectories
round trip trajectories
transfer orbits

Earth-Venus trajectories
GS trajectories

. spacecraft trajectories
. . interplanetary trajectories
. . . Earth–Venus trajectories
RT ∞ astronautics
flight optimization
interplanetary flight
∞ missions
orbits
space missions
space navigation
spacecraft reentry
transfer orbits

Earthnet
RT Earth observations (from space)
Earth resources
ESA satellites
European space programs
Landsat satellites
remote sensors
synthetic aperture radar

earthquake damage
GS damage
. earthquake damage
RT Earth crust
Earth movements
geological faults
microseisms
seismic energy
seismic waves
seismology
shock waves
tsunami waves

earthquake resistance
DEF Structural strength of natural geological formations reacting to seismic forces.
GS mechanical properties
. earthquake resistance
RT crustal fractures
earthquakes
fracture strength
impact strength
landforms
∞ resistance
seismic waves
shock resistance
shock waves
tremors

earthquake resistant structures
DEF Buildings and other structures designed for maximum safety and protection from the effects of earthquakes.
RT concrete structures
elastic bending
∞ elastic systems
seismic waves
shock waves
structural vibration
∞ structures

earthquakes
DEF Sudden motions or tremblings in the Earth caused by the abrupt release of slowly accumulated strain.
GS Earth movements
. earthquakes
RT crustal fractures
earthquake resistance
geological faults
large aperture seismic array
microseisms
planetary quakes
plates (tectonics)
Rouse belts
San Andreas Fault
San Andreas Fault experiment
seismic waves
seismology
shock waves
subduction (geology)
tremors
tsunami waves

EASEP
UF *Early Apollo Surface Experiments Package*
GS packages
. instrument packages
. . EASEP
RT ∞ instruments
lunar exploration
payloads
∞ surfaces

East Germany
UF *German Democratic Republic*
Peoples Democratic Republic of Germany
GS nations
. East Germany
RT Central Europe
Europe
German space program
Germany
West Germany

East Pakistan
USE Bangladesh

Eastern Hemisphere
RT Earth (planet)
geography
∞ hemispheres
Western hemisphere

eating
GS ingestion (biology)
. eating
RT digesting
∞ food
mastication
space flight feeding
swallowing
synthetic food

Ebert spectrometers
GS measuring instruments
. optical measuring instruments
. . Ebert spectrometers
. radiation measuring instruments
. . Ebert spectrometers
. spectrometers
. . Ebert spectrometers
optical equipment
. optical measuring instruments
. . Ebert spectrometers
RT Earth albedo
fiber wheel infrared spectrometers
infrared spectrometers
ultraviolet spectrometers

EBF
USE externally blown flaps

EBR-1 reactor
USE Experimental Breeder Reactor 1

EBR-2 reactor
USE Experimental Breeder Reactor 2

ebullition
USE boiling

EBWR (reactor)
USE experimental boiling water reactors

EC-121 aircraft
USE C-121 aircraft

EC-135 aircraft
USE C-135 aircraft

Eccentric Geophysical Observatory
USE EGO

Eccentric Orbit Geophysical Observatory
USE EGO

eccentric orbits
GS orbits
. eccentric orbits
RT circular orbits
elliptical orbits
Exosat satellite
Lissajous figures

eccentricity
RT abnormalities
asymmetry
balancing
concentricity
deviation
ellipticity
elongation
skewness
symmetry
variability
variations

eccentrics
UF cranks
RT cams
linkages

echelette gratings
GS gratings (spectra)
. echelette gratings
RT diffraction
echelle gratings
reflection

echelle gratings
(added August 1988)
GS gratings (spectra)
. echelle gratings
RT diffraction
echelette gratings
reflection

echelon faults
USE geological faults

Echo 1 carrier rocket
USE Thor Delta launch vehicle

Echo 1 satellite
UF *A-17 satellite*
GS artificial satellites
. passive satellites
. . Echo satellites
. . . Echo 1 satellite
RT Thor Delta launch vehicle

Echo 2 satellite
UF *A-12 satellite*
GS artificial satellites
. passive satellites
. . Echo satellites
. . . Echo 2 satellite
unmanned spacecraft
. Echo 2 satellite

Echo project
GS programs
. NASA programs
. . NASA space programs

. . . Echo project
. projects
. . Echo project
. space programs
. . NASA space programs
. . . Echo project
RT communication satellites
passive satellites

Echo satellites
GS artificial satellites
. passive satellites
. . Echo satellites
. . . Echo 1 satellite
. . . Echo 2 satellite
RT Agena B rocket vehicle
Agena rocket vehicles

echo sounding
GS sounding
. echo sounding
RT deep scattering layers
depth measurement
echoes
navigation aids
sonar
sound localization
sound ranging
underwater acoustics

echo suppressors
GS circuits
. echo suppressors
suppressors
. echo suppressors
RT noise reduction
pulse radar
radiotelephones
sonar
switches
telephony
voice communication

echocardiography
GS bioengineering
. biometrics
. . cardiography
. . . phonocardiography
. . . . echocardiography
RT cardiac ventricles
heart diseases
heart function

echoencephalography
DEF A diagnostic technique in which pulses of ultrasonic waves are beamed through the head from both sides, and echoes from the midstructures of the brain are recorded as graphic tracings.
GS bioengineering
. biometrics
. . echoencephalography
RT biotelemetration
brain
electrophysiology
medical electronics
medical equipment

echoes
DEF Waves that have been reflected or otherwise returned with sufficient magnitude and delay to be detected as a wave distinct from that directly transmitted. In radar, a pulse of reflected radiofrequency energy; the appearance on a radar indicator of the energy returned from a target.
GS echoes
. auroral echoes
. lunar echoes
. . lunar radar echoes
. radar echoes
. . angels (radar)
. . clutter
. . lunar radar echoes
. . solar radar echoes
. . Venus radar echoes
. radio echoes
. signal reflection
RT acoustics
cepstral analysis
echo sounding
ground effect (communications)
noise (sound)
reverberation

eclipse project
GS programs
. projects
. . eclipse project

eclipses
DEF The reductions in visibility or disappearances of nonluminous bodies by passing into the shadows cast by another nonluminous body. The apparent cutting off, wholly or partially, of the light from a luminous body by a dark body coming between it and the observer.
GS eclipses
. lunar eclipses
. solar eclipses
RT eclipsing binary stars
lunar shadow
occultation
penumbras
umbras

eclipsing binary stars
GS celestial bodies
. stars
. . double stars
. . . binary stars
. . . . eclipsing binary stars
. . . . . dwarf novae
. . . . . Lambda Tauri stars
. . . . . Zeta Aurigae star
RT accretion disks
cataclysmic variables
eclipses
stellar occultation
symbiotic stars
variable stars
x ray binaries

ecliptic
DEF The apparent annual path of the sun among the stars; the intersection of the plane of the Earth's orbit with the celestial sphere. The ecliptic is a great circle of the celestial sphere inclined at an angle of about 23 degrees 27 minutes to the celestial equator.
RT planets
solar orbits
zodiac

eclogite
GS rocks
. igneous rocks
. . eclogite
RT gadolinium-gallium garnet
garnets
pyroxenes
soils

ecological systems
USE ecosystems

ecology
DEF The study of the environmental relations of organisms. Used for ecological systems.
GS ecology
. coastal ecology
RT biochemical oxygen demand
∞ biology
biometeorology
carbon cycle
Central Atlantic Regional Ecol Test Site
closed ecological systems
coastal plains
Earth sciences
ecosystems
endangered species
energy policy
environments
Gaia hypothesis
habitability
habitats
phenology
predators
symbiosis
vegetation growth

econometrics
DEF The application of mathematics and statistical techniques to the testing and quantifying of economic theories and the solution of economic problems.
RT ∞ applications of mathematics
economics
gross national product
statistical correlation

economic analysis
RT allocations
comparison
cost analysis
cost estimates
costs
economy
efficiency
management
operating costs
value engineering

economic development
RT commerce
developing nations
economy
geographic distribution
geography
industries
land use
manufacturing
resources
space industrialization
urban development

economic factors
RT allocations
budgeting
commercial energy
costs
developing nations
domestic energy
economy
efficiency
energy policy
feasibility analysis
industrial energy
insurance (contracts)
management
reserves
resources
transportation energy

economic impact
DEF The impact on the economy from whatever cause.
GS impact
. economic impact
RT costs
environments
industries
investments
resources

economics
GS economics
. demand (economics)
RT costs
econometrics
evaluation
fiduciaries
income
international trade
investments
prejudices
progress
recession
resources
statistical analysis

economy
RT cost estimates
decision making
economic analysis
economic development
economic factors
financial management
low cost
management planning
recycling

ecosystems
UF ecological systems
RT closed ecological systems
ecology
endangered species
food chain
Gaia hypothesis
predators
= systems

ECS
USE European Communications Satellite

Ecuador
GS nations
. Ecuador
RT South America

eddies
USE vortices

Eddington approximation
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . Eddington approximation

eddy currents
SN (LIMITED TO ELECTRIC CURRENTS)
DEF Electric currents caused to flow in a conductor by the time or space variation, or both, of an applied magnetic field.
GS electric current
. eddy currents
RT braking
electric conductors
electrical properties
hysteresis
losses
magnetic properties
= physical properties
plasma currents
vorticity transport hypothesis

eddy diffusion
USE turbulent diffusion

eddy viscosity
DEF The turbulent transfer of momentum by eddies giving rise to an internal fluid friction, in a manner analogous to the action of molecular viscosity in laminar flow, but taking place on a much larger scale.
GS transport properties
. viscosity
. . eddy viscosity
RT Baldwin-Lomax turbulence model
flow characteristics
flow resistance
internal friction
large eddy simulation
turbulent flow
viscous drag
viscous flow

edema
GS signs and symptoms
. edema
RT body fluids
diuresis
water balance

edge cracks
(added October 1987)
GS fractures (materials)
. cracks
. . edge cracks
RT cracking (fracturing)
edge loading
edges
stress intensity factors
surface cracks

edge detection
(added January 19--)
UF *boundary detection (imagery)*
GS detection
. edge detection
RT computer vision
image analysis
image processing
pattern recognition
scene analysis

edge dislocations
UF *slip bands*
GS defects
. crystal defects
. . crystal dislocations
. . . edge dislocations
dislocations (materials)
. crystal dislocations
. . edge dislocations
RT = bands
screw dislocations

edge loading
GS loads (forces)
. edge loading
RT aerodynamic loads
compression loads
dynamic loads
edge cracks
static loads
wing loading

edges
GS edges
. leading edges
. . blunt leading edges
. . sharp leading edges
. trailing edges
. . blunt trailing edges
RT edge cracks
margins
rims
scalloping
sides
tips

editing
RT data processing
data reduction
editing routines (computers)
format
technical writing

editing routines (computers)
GS computer programs
. editing routines (computers)
RT computer systems programs
data processing
editing

EDTA
USE ethylenediaminetetraacetic acids

education
UF instructions
teaching
training
GS education
. ejection training
. flight training
. . pilot training
. . space flight training
. . . astronaut training
. gunnery training
. maintenance training
. programmed instruction
. . computer assisted instruction
RT behavior
communicating
creativity
experience
human factors engineering
human resources
instructors
knowledge
learning
learning theory
lectures
memory
= orientation
psychometrics
qualifications
retraining
safety management
schools
students
= tests
textbooks
training analysis
training devices
transfer of training
universities

educational television
GS telecommunication
. educational television
television systems
. educational television
RT closed circuit television
color television
communication equipment
learning
networks
stereotelevision

training devices

EEG (electroencephalogram)
USE electroencephalography

effective perceived noise levels
UF EPNL
GS level (quantity)
. effective perceived noise levels
RT acoustic measurement
acoustics
loudness
<< noise
noise (sound)
noise intensity
noise reduction
sound intensity

effectiveness
GS effectiveness
. cost effectiveness
. system effectiveness
RT efficiency

<< effectors
(added September 1988)
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT actuators
control equipment
end effectors
manipulators

<< effects
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF effects
RT atmospheric effects
Auger effect
Barkhausen effect
Bauschinger effect
biological effects
Brillouin effect
brown wave effect
capture effect
caustic
Cerenkov radiation
chemical effects
Coanda effect
compressibility effects
Compton effect
Corbino effect
diffusion
Doppler effect
Doppler-Fizeau effect
electro-optical effect
environment effects
Ettingshausen effect
Faraday effect
field effect transistors
Fizeau effect
Fotbukh darkness
galvanomagnetic effects
gravitational effects
green wave effect
greenhouse effect
ground effect (aerodynamics)
ground effect (communications)
ground effect machines
Gunn effect
Hall effect
hydrodynamic ram effect
isotope effect
John-Teller effect
jet blast effects
Joule-Thomson effect
<< Kerr effects
Kerr electrooptical effect
Kerr magnetooptical effect
Khvorstall effect
Kondo effect
long term effects
lunar effects
lunar gravitational effects
Luxemburg effect
magnetic effects
Magnus effect
Mohr effects
Moseley effect
Nernst-Ettingshausen effect
nonohmic effect
nuclear explosion effect
Overhauser effect
pathological effects
Peltier effects
Penning effect
photoelastic effect
photoelectromagnetic effects
photomagnetic effects
photomechanical effect
photovoltaic effect
physiological effects
pinch effect
PIXIE effects
Porpuin-la Chalder effect
Poynting-Robertson effect
pressure effects
proximity effect (electricity)
psychological effects
radiation effects
Ramsauer effect
reentry effects
relativistic effects
scale effect
Schach effect
screen effect
Seebeck effect
solar activity effects
Stark effect
stratization effects
Suhl effect
surface effect ships
surface roughness effects
sweep effect
temperature effects
thermomagnetic effects
turbulence effects
Umklapp effect
vacuum effects
vibration effects
view effects
Voigt effect
wind effects
Zeeman effect
Zener effect

efferent nervous systems
UF motor systems (biology)
GS anatomy
. nervous system
. . efferent nervous systems
RT neuromotor performance
<< systems

effervescence
RT boiling
bubbles
surface properties

efficiency
GS efficiency
. charge efficiency
. combustion efficiency
. compressor efficiency
. energy conversion efficiency
. nozzle efficiency
. power efficiency
. propulsive efficiency
. . propfan efficiency
. thermodynamic efficiency
. transmission efficiency
RT aircraft production costs
comfort
commonality
compression ratio
computer systems performance
cost incentives
cost reduction
costs
economic analysis
economic factors
effectiveness
feasibility
figure of merit
human factors engineering
incentive techniques
indexes (ratios)
optimization
<< performance
productivity
ratios
utilization

effluents
RT air pollution
contaminants
<< discharge
environment protection
exhaust gases
filtration
liquid wastes
reaction products
settling
sewage
sewers
waste disposal
wastes

efflux
RT emission
output

effort
RT abilities
coroldancy
fatigue (biology)
<< performance
physical work

effusives
GS effusives
. lava
RT cones (volcanoes)
igneous rocks
lava volcanoes
rocks
volcanoes
volcanology

EGCR (reactor)
USE experimental gas cooled reactors

eggs
GS cells (biology)
. gametocytes
. . eggs
RT embryos
fetuses
<< food
ovaries

EGO
UF *Eccentric Geophysical Observatory*
Eccentric Orbit Geophysical Observatory
EOGO
GS artificial satellites
. geophysical satellites
. . OGO
. . . EGO
observatories
. geophysical observatories
. . OGO
. . . EGO
RT Agena B rocket vehicle
Atlas launch vehicles
POGO

egress
RT air locks
doors
hatches
ingress (spacecraft passageway)
openings
outlets

Egypt
GS nations
. Egypt
RT Africa

EH-101 helicopter
(added April 1997)
UF *Haillow (helicopter)*
Merlin (helicopter)
GS V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . EH-101 helicopter
RT aircraft
commercial aircraft
military helicopters

eigenfunctions
USE *eigenvector*

eigenstates
USE eigenvectors

eigenvalues
UF characteristic equations
characteristic functions
GS algebra
. vector spaces
. . matrices (mathematics)
. . . eigenvalues
RT eigenvectors
flux vector splitting
Hill determinant
Jacobi matrix method
Jordan form
polynomials
roots of equations

eigenvectors
UF characteristic equations
characteristic functions
eigenfunctions
eigenstates
GS algebra
. vector spaces
. . matrices (mathematics)
. . . eigenvectors
. . vectors (mathematics)
. . . eigenvectors
RT eigenvalues
Jacobi matrix method
Mathieu function
polynomials

eikonal equation
GS wave equations
. eikonal equation
RT equations
geometrical optics
Pomeranchuk theorem
refracted waves
wave fronts
wave theory

Einstein equations
GS analysis (mathematics)
. real variables
. . Einstein equations
RT Brownian movements
diffusion
diffusion theory
equations
equations of motion
grand unified theory
kinetic equations
probability theory

Einstein Observatory
USE HEAO 2

einsteinium
GS chemical elements
. actinide series
. . transuranium elements
. . . einsteinium
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . einsteinium
metals
. actinide series
. . transuranium elements
. . . einsteinium
RT einsteinium compounds

einsteinium compounds
GS actinide series compounds
. einsteinium compounds
RT einsteinium

EISCAT radar system (Europe)
DEF The European Incoherent Scatter Radar system. Used for European Incoherent Scatter Radar.
UF *European Incoherent Scatter Radar*
GS radar
. incoherent scatter radar
. . EISCAT radar system (Europe)
RT incoherent scattering
international cooperation
ionospheric propagation
radar scattering
radar transmission
systems
ultrahigh frequencies

ejecta
DEF Matter ejected during impact cratering processes, usually meteoritic.
RT cratering
craters
debris
ejection
fragments
impact damage
Mare craters
meteorite craters
meteoritic damage
projectile cratering
Wolf-Rayet stars

ejection
GS ejection
. stellar mass ejection
. . coronal mass ejection
RT ballout
discharge
disconnect devices
disposal
dumping
ejecta
. ejectors
emission
emptying
escape (abandonment)
escape systems
evacuating (transportation)
evacuating (vacuum)
exhausting
expulsion
expulsion bladders
fluxing
jettison systems
jettisoning
materials handling
parachute descent
releasing
removal
shedding
throwing
unloading

ejection injuries
GS injuries
. ejection injuries
RT ballout
pilot training

ejection seats
GS onboard equipment
. aircraft equipment
. . ejection seats
. . . flying ejection seats
safety devices
. ejection seats
. . flying ejection seats
seats
. ejection seats
. . flying ejection seats
RT abort apparatus
aircraft safety
ballout
cockpits
ejectors
escape capsules
escape systems
jettison systems
propellant actuated devices

ejection training
GS education
. ejection training
RT astronaut training
ballout
escape (abandonment)
flight training
parachute descent
pilot training

ejectors
DEF Devices consisting of a nozzle, mixing tube, and diffuser utilizing the kinetic energy of a fluid from a low pressure region by direct mixing and ejecting both streams.
RT dispensers
ejection
ejection seats
exhaust diffusers

exhaust nozzles
exhaust systems
flying ejection seats
injectors
jet engines
jet pumps
missiles handling
pumps
rocket engines
sprayers
vacuum pumps

Ekman layer
DEF The layer of transition between the surface boundary layer of the atmosphere, where the shearing stress is constant, and the free atmosphere, which is treated as an ideal fluid in approximate geostrophic equilibrium.
RT atmospheric boundary layer
boundary layer transition
∞ layers
rolling layers (fluids)
porous boundary layer control
turbulent boundary layer

el Nino
DEF A warming of the surface waters of the eastern equatorial Pacific Ocean that occurs at irregular intervals of 1–2 years, usually lasting 1–2 years.
GS circulation
. water circulation
. . water currents
. . . ocean currents
. . . . el Nino
RT air water interactions
ocean temperature
Pacific Ocean
periodic variations
Southern oscillation
tropical meteorology

El Salvador
GS nations
. El Salvador
RT Central America

Elara
(added July 1988)
DEF A natural satellite of Jupiter, orbiting at a mean distance of 11,737,000 kilometers.
GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . Elara
RT Jupiter (planet)

elastic anisotropy
GS anisotropy
. plastic anisotropy
. . elastic anisotropy

elastic bars
GS bars
. elastic bars

elastic bending
GS bending
. elastic bending
deformation
. elastic deformation
. . elastic bending
RT earthquake-resistant structures

elastic bodies
RT∞ bodies
∞ elastic systems
elastodynamics
elastostatics
plastic bodies

elastic buckling
GS buckling
. elastic buckling
deformation
. elastic deformation
. . elastic buckling
RT failure modes

elastic collisions
USE elastic scattering

elastic constants
USE elastic properties

elastic cylinders
RT∞ cylinders
cylindrical bodies
cylindrical shells

elastic damping
GS damping
. elastic damping
. . viscoelastic damping
elastodynamics
. elastic damping
. . viscoelastic damping
RT resonance tuning
vibration damping
viscous damping

elastic deformation
GS deformation
. elastic deformation
. . elastic bending
. . elastic buckling
RT axial strain
bending
Bordoni peaks
bulation
elastodynamics
elastostatics
flexible spacecraft
plane strain
plastic deformation
prestressing
strain distribution
strain energy release rate
stress-strain relationships
stretching
structural strain
tensile deformation

elastic media
GS media
. elastic media
RT elastodynamics
elastostatics

elastic modulus
USE modulus of elasticity

elastic plates
GS structural members
. plates (structural members)
. . elastic plates
RT plastic bodies
plastic plates

elastic properties
DEF Properties of materials by virtue of which they tend to recover their original size and shape immediately after removal of the forces causing deformation. Used for elastic constants and elasticity.
UF elastic constants
elasticity
GS mechanical properties
. elastic properties
. . acoustability
. . . anisotropy
. . . isotropy
. . anisotropy
. . dissipativity
. . hydrostability
. . hypostability
. . magnetostriction
. . modulus of elasticity
. . . dynamic modulus of elasticity
. . photostability
. . . photoviscoelasticity
. . proportional limit
. . thermostability
. . . isothermoelasticity
. . viscostability
. . . photoviscoelasticity
. . . thermoviscoelasticity
RT Airy function
biharmonic equations
compressive strength
elastodynamics
elastomers
elastostatics
flexibility
Hookes law
hybrid structures
influence coefficient
microcracks
microyield strength
∞ physical properties
piezoelectricity
plastic properties
Poisson ratio
propellant properties
∞ properties
resilience
softness
strain energy release rate
stress tensors
tensile properties
Ueda strength
yield strength

elastic scattering
UF elastic collisions
GS scattering
. elastic scattering
RT atomic collisions
∞ coherence
coherent scattering
electron scattering
Glauber theory
inelastic scattering
nuclear scattering
photon-electron interaction
Pomeranchuk theorem

elastic shells
RT girder webs
∞ shells
webs (shells)
webs (supports)

elastic shells
GS shells (structural forms)
. elastic shells
RT anisotropic shells
plastic shells

elastic stability
USE damping

elastic strength
USE proportional limit

= elastic systems
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT earthquake resistant structures
elastic bodies
= systems

elastic waves
UF expansion waves
loading waves
pressure waves
rarefaction waves
GS elastic waves
. capillary waves
. gravity waves
. . baroclinic waves
. . ripples
. coherent acoustic radiation
. compression waves
. dilatational waves
. ionic waves
. magnetoelastic waves
. . magnetoacoustic waves
. magnetohydrodynamic waves
. . plasma waves
. . . electrostatic waves
. P waves
. phonons
. . phonon beams
. polarized elastic waves
. S waves
. . SH waves
. seismic waves
. . Love waves
. . microseisms
. . Rayleigh waves
. shock waves
. . detonation waves
. . Mach cones
. . normal shock waves
. . oblique shock waves
. . Riemann waves
. . sonic booms
. sound waves
. . electroacoustic waves
. . ion acoustic waves
. . Lamb waves
. . noise (sound)
. . . aerodynamic noise
. . . . blade slap noise
. . . . propeller noise
. . . aircraft noise
. . . . blade slap noise
. . . . jet aircraft noise
. . . . propeller noise
. . . . sonic booms
. . . engine noise
. . . . rocket engine noise
. . . thermal noise
. stress waves
. Tolmien-Schlichting waves
. ultrasonic radiation
. unloading waves
RT acoustic properties
acoustic simulation
acoustics
aeolian tones
background noise
backward waves
cnoidal waves
coherent radiation
combustion vibration
continuous radiation
cylindrical waves
diffusion waves
Doppler effect
elastodynamics
elastohydrodynamics
Lame wave equations
longitudinal waves
magnetohydrodynamic stability
plane waves
polarized radiation
pressure
pulsed radiation
= radiation
radiation distribution
radiation pressure
rarefaction
reflected waves
refracted waves
sine waves
solitary waves
sound transmission
spherical waves
stress propagation
surface waves
transverse waves
traveling waves
tropospheric waves
underwater acoustics
vibration
wave dispersion
= waves

elasticity
USE elastic properties

elastizers
USE plasticizers

elastin
GS biopolymers
. proteins
. . elastin
organic compounds
. proteins
. . elastin
RT albumins

elastodynamics
GS elastodynamics
. elastic damping
. . viscoelastic damping
. elastohydrodynamics
RT = dynamics
elastic bodies
elastic deformation
elastic media
elastic properties
elastic waves
elastostatics
electrorheological fluids

elastohydrodynamics
GS elastodynamics
. elastohydrodynamics
fluid mechanics
. fluid dynamics
. . hydrodynamics
. . . elastohydrodynamics
. hydromechanics
. . hydrodynamics
. . . elastohydrodynamics
RT ball bearings
elastic waves
friction measurement
lubrication
rolling cylinders
squeeze films
water waves

elastomers
DEF Macromolecular materials which, at room temperature, are capable of recovering substantially in size and shape after removal of a deforming force.
GS elastomers
. rubber
. . synthetic rubbers
. . . Adiprene (trademark)
. . . Buna (trademark)
. . . silicone rubber
. . . . RTV-40 rubber (trademark)
. . . . RTV-60 rubber (trademark)
. . . Viton rubber (trademark)
. . . vulcanized elastomers
. . . . RTV-40 rubber (trademark)
. . . . RTV-60 rubber (trademark)
. . . chloroprene resins
RT latex
organic materials
plastics
= polymers
softness
sponges (materials)
thioplastics

elastometers
GS measuring instruments
. elastometers
RT elastic properties
extensometers
strain gages

elastoplasticity
GS mechanical properties
. elastic properties
. . elastoplasticity
. plastic properties
. . elastoplasticity
RT J integral
plastic bodies
plastic plates
plastic shells
superplastic forming

elastostatics
RT elastic bodies
elastic deformation
elastic media
elastic properties
elastodynamics
statics

Elber equation
DEF In fatigue crack propagation studies, the effective stress range ratio U = 0.5 + 0.4R, where R is the stress ratio.
RT crack closure
cracks
cyclic loads
= equations
fractography
fracture mechanics
microcracks
stress concentration
stress cycles

elbow (anatomy)
GS anatomy
. limbs (anatomy)
. . arm (anatomy)
. . . elbow (anatomy)
. musculoskeletal system
. . joints (anatomy)
. . . elbow (anatomy)
appendages
. arm (anatomy)

. . elbow (anatomy)
RT humerus
ulna

Eldo launch vehicle
GS launch vehicles
. Eldo launch vehicle
rocket vehicles
. multistage rocket vehicles
. . Eldo launch vehicle
RT Ariane launch vehicle
Blue Streak launch vehicle
Europa launch vehicles
European 1 spacecraft
European Space Agency

Electra aircraft
GS commercial aircraft
. Electra aircraft
jet aircraft
. turboprop aircraft
. . Electra aircraft
Lockheed aircraft
. Electra aircraft
monoplanes
. Electra aircraft
passenger aircraft
. Electra aircraft
transport aircraft
. Electra aircraft
RT= aircraft

electrets
RT capacitors
Curie temperature
dielectric polarization
dielectrics
electric energy storage
electric fields
energy storage
magnets
polarization (charge separation)

electric aircraft
USE fly-by-wire control

electric appliances
USE electric equipment

electric arcs
DEF (1) a luminous discharge of electricity through a gas. (2) A prolonged electrical discharge or series of prolonged discharges between two electrodes with no physical contact between them.
GS electric current
. electric discharges
. . electric arcs
. . . carbon arcs
. . . mercury arcs
RT arc chambers
arc discharges
arc generators
= arcs
corona
electrical faults
flashover
gas discharges
glow discharges
ionization
light sources
lightning
magnetohydrodynamics
plasmatrons
plasma generators
plasmas (physics)
Saha equations
short circuits

electric automobiles
GS surface vehicles
. motor vehicles
. . automobiles
. . . electric automobiles
. . electric motor vehicles
. . . electric automobiles
RT transportation

electric batteries
SN (INCLUDES BOTH RECHARGEABLE OR STORAGE BATTERIES AND NON-RECHARGEABLE BATTERIES FOR GENERATING CURRENT FROM A STORED CHEMICAL ENERGY SOURCE)
UF batteries
GS electrochemical cells
. electric batteries
. . lithium sulfur batteries
. . nickel iron batteries
. . primary batteries
. . . alkaline batteries
. . . dry cells
. . . . magnesium cells
. . . . nickel zinc batteries
. . . metal air batteries
. . . . zinc-oxygen batteries
. . . sodium sulfur batteries
. . . thermal batteries
. . Redox cells
. . storage batteries
. . . lead acid batteries
. . . nickel cadmium batteries
. . . nickel hydrogen batteries
. . . nickel zinc batteries
. . . silver cadmium batteries
. . . silver hydrogen batteries
. . . silver zinc batteries
. . . zinc-bromide batteries
. . . zinc-chlorine batteries
. . wet cells
RT auxiliary power sources
battery chargers
charge efficiency
chemical auxiliary power units
direct power generators
= electric cells
= electric power
electrodes
electrolytes
electrolytic cells
electromotive force
= energy sources
energy storage
nonaqueous electrolytes
= power supplies
pulse charging
radioisotope batteries
railway powered vehicles
space station power supplies
spacecraft power supplies
voltage converters (DC to DC)

electric bridges
GS circuits
. electric bridges
. . wire bridge circuits
. . . Wheatstone bridges
RT= bridges
capacitors
electrical measurement
measuring instruments
solid state devices

= electric cells
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT amplifiers
direct power generators
electric batteries
electric generators
electrochemical cells
electrolytic cells
fission electric cells
fuel cells
Kerr cells
lead acid batteries
lithium sulfur batteries
nonaqueous electrolytes
photoelectric cells
sodium sulfur batteries
solar cells
wet cells

electric charge
GS electric charge
. electric dipoles
. . orbiting dipoles
. electrostatic charge
. ion charge
. space charge
. traveling charge
RT capacitance
= charging
= dipoles
electrical properties
electrometers
polarity
polarization (charge separation)
pulse charging
SCATHA satellite

electric choppers
SN (DEVICES FOR CONVERTING DC TO AC)
UF chopper (electric)
RT amplifiers
mechanical oscillators

electric circuits
USE circuits

electric coils
GS electric coils
. magnetic coils
. . field coils
. . magnet coils
RT chokes
= coils
ignition systems
impedance
magnetic cores
transformers

electric conductors
UF electrical leads
GS conductors
. electric conductors
. . beam leads
. . conducting polymers
. . electric wire
RT= conduction
dielectrics
eddy currents
electrical insulation
electrical resistivity
electromagnetic shielding
insulators
resistors
semiconductors (materials)
Sommerfeld wave
thermal conductors

transmission lines.

electric connectors.
DEF: Connecting devices, ordinarily designed for use in a fixed location to which a wire or wires of a circuit may be attached and that are arranged for the insertion of a plug. Used for jacks (electrical).
UF: connectors (electric)
jacks (electrical)
GS: connectors
. electric connectors
RT: beam leads
circuits
disconnect devices
electric terminals
flat conductors
= jacks
switches

electric contacts.
UF: contacts (electric)
RT: brushes
brushes (electrical contacts)
commutators
contact potentials
contact resistance
dropouts
flat conductors
= relay
= sliding contact
sliding friction
switches

electric control.
UF: electrohydraulic control
RT: automatic control
= control
control equipment
control systems design
electronic control
engine control
numerical control
optical control
remote control
solenoid valves
voltage controlled oscillators

electric corona.
DEF: A luminous, and often audible, electric discharge that is intermediate in nature between a spark discharge (with, usually, its single discharge channel) and a non point discharge (with its diffuse, quiescent, nonluminous character). Used for corona discharges.
UF: corona discharges
GS: coronas
. electric corona
electric current
. electric discharges
. . electric corona
RT: atmospheric electricity
electrohydrodynamics
glow discharges
ionization
solar corona
static electricity

electric current.
UF: amperage
electroosmotic effect
Hall currents
photocurrents
GS: electric current
. alternating current
. beam currents
. Brillouin flow
. direct current
. eddy currents
. electric discharges
. . arc discharges
. . electric arcs
. . . carbon arcs
. . . mercury arcs
. . electric corona
. . electric sparks
. . electrodeless discharges
. . flashover
. . glow discharges
. . lightning
. . . ball lightning
. . multipactor discharges
. . Penning discharge
. . radio frequency discharge
. . Saint Elmo fire
. . Townsend discharge
. . . gas discharges
. . . . toroidal discharge
. . . . . ring discharge
. external surface currents
. field aligned currents
. . Birkeland currents
. high current
. ionospheric currents
. . Birkeland currents
. . electrojets
. . . auroral electrojets
. . . equatorial electrojet
. dark current
. fine current
. low currents
. plasma currents
. ring currents
. short circuit currents
. telluric currents
. threshold currents
RT: armatures
circuits
current converters (AC to DC)
current density
current regulators
current sheets
= currents
= electric power
electrical resistivity
electricity
high voltages
hydroelectricity
inverted converters (DC to AC)
Kirchhoff law of networks
levitation melting
Lienard potential
low conductivity
micromillimmeters
Ohms law
power conditioning
system generated electromagnetic pulses
transmission lines
volt-ampere characteristics

electric dipoles.
GS: electric charge
. electric dipoles
. . orbiting dipoles
RT: = dipoles
magnetic dipoles

electric discharges.
DEF: The flowing of electricity through a gas, resulting in the emission of radiation that is characteristic of the gas and the intensity of the current.
GS: electric current
. electric discharges
. . arc discharges
. . electric arcs
. . . carbon arcs
. . . mercury arcs
. . electric corona
. . electric sparks
. . electrodeless discharges
. . flashover
. . glow discharges
. . lightning
. . . ball lightning
. . multipactor discharges
. . Penning discharge
. . radio frequency discharge
. . Saint Elmo fire
. . Townsend discharge
. . . gas discharges
. . . . toroidal discharge
. . . . . ring discharge
RT: avalanches
coronas
= discharge
dropbreakdowns
electron emission
electrostatic charge
= flash
ionization
lightning suppression
Maxwell satellites
plasma currents
space charge
Zener effect

electric energy storage.
GS: energy storage
. electric energy storage
RT: capacitors
direct power generators
electrets
inductors
potential energy

= electric equipment.
SN: (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF: electric appliances
RT: airborne equipment
circuits
current regulators
electric generators
electric power transmission
electricity
electromechanical devices
electronic equipment
heating equipment
homopolar generators
lighting equipment
logistics
miniature electronic equipment
motors
solenoid valves
UPSes
voltage converters (AC to AC)
voltage converters (DC to DC)
welding machines

electric equipment tests.
SN: (CHECKOUT OF ELECTRICAL EQUIPMENT)
RT: electrical measurement
electronic equipment tests
ground tests
= tests

electric field strength.
GS: field strength

. electric field strength
RT Coulomb potential
= fields
H waves
= strength

electric fields.
UF electrostatic fields
RT helium ion clouds
ions
nonlinear equations
Coulomb potential
crossed fields
crystal field theory
dielectric polarization
electric
electrodynamics
electromagnetism
electromechanics
electrostatic charge
electrostatics
external surface currents
field emission
field strength
= fields
Lienard potential
magnetic fields
permittivity
polarity
spacecraft charging
spark gaps
Stark effect
static electricity

electric filters.
GS electromagnetic wave filters
. electric filters
. . bandstop filters
. . crystal filters
. . digital filters
. . . FIR filters
. . microwave filters
. . notch filters
. . radio filters
. . tracking filters
. . waveguide filters
RT adaptive filters
bandpass filters
equations
circuits
electronic filters
= filters
high pass filters
infrared filters
Kalman filters
linear filters
low pass filters
nonlinear filters
optical filters
RC circuits
receivers
reduced order filters
resistors
transformers
tunable filters
ultraviolet filters
Wiener filtering

electric furnaces.
DEF Furnaces whose heat is derived from electrical energy, generally achieved through resistance heating. Materials research and space processing are research uses.
GS heating equipment
. furnaces
. . electric furnaces
RT= materials
space processing

electric heats.
RT circuit protection
disconnect devices
= heats

electric generators.
UF electric power conversion
electrogenerators
power generators
GS electric generators
. AC generators
. . linear alternators
. . static alternators
. direct power generators
. . DC generators
. . . homopolar generators
. . electrostatic generators
. . fuel cells
. . . biochemical fuel cells
. . . hydrogen oxygen fuel cells
. . . molten carbonate fuel cells
. . . phosphoric acid fuel cells
. . . regenerative fuel cells
. . . solid oxide fuel cells
. . magnetohydrodynamic generators
. . photovoltaic generators
. . . photovoltaic cells
. . . . solar cells
. . . . . vertical junction solar cells
. . primary batteries
. . . alkaline batteries
. . . dry cells
. . . . magnesium cells
. . . . nickel zinc batteries
. . . metal air batteries
. . . . zinc-oxygen batteries
. . . sodium sulfur batteries
. . . thermal batteries
. . radioisotope batteries
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 11
. . . SNAP 13
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . thermionic converters
. . . SNAP 13
. . . solar blankets
. . thermoelectric generators
. . . SNAP 3
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 10A
. . . SNAP 11
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . . solar sea power plants
. rotating generators
. . amplidynes
. . dynamotors
. . homopolar generators
. . turbogenerators
. . . ASTEC solar turboelectric generator
. solar generators
. . solar auxiliary power units
. . . ASTEC solar turboelectric generator
. . solar cells
. . . vertical junction solar cells
. . solar dynamic power systems
RT aircraft power supplies
arc generators
armatures
auxiliary power sources
brushes
brushes (electrical contacts)
closed cycles
cogeneration
combined cycle power generation
= conversion
= converters
= electric cells
= electric equipment
electrical engineering
electromotive forces
= energy sources
= generators
nuclear electric power generation
= power
power conditioning
= power supplies
SNAP
solar ponds (heat storage)
static inverters
thermonuclear power generation
tide powered generators
windmills (windpowered machines)
windpowered generators

electric hybrid vehicles.
DEF Surface vehicles which utilize propulsion systems of both electric motors and conventional internal combustion engines.
GS surface vehicles
. electric hybrid vehicles
RT automobiles
internal combustion engines
= rotating electrical machines
= vehicles

electric ignition.
GS ignition
. electric ignition
RT igniters
ignition systems
spark ignition
squibs
starting

electric impulses
USE electric pulses

electric moments.
GS electrical properties
. electric moments
. . dipole moments
. . . electric moments
RT magnetic moments
polarization (charge separation)

electric motor vehicles.
GS surface vehicles
. motor vehicles
. . electric motor vehicles
. . . electric automobiles
RT automated transit vehicles
automobiles
Ohio's Factory
research vehicles
roadway powered vehicles
test vehicles

tractors
trucks
xx vehicles

electric motors
GS motors
electric motors
.. asynchronous motors
.. induction motors
.. micromotors
.. stepping motors
.. synchronous motors
.. torque motors
RT amplidynes
armatures
brushes
brushes (electrical contacts)
circuits
commutators
electrommotors
power factor controllers
xx rotating electrical machines
servomechanisms
servomotors
stators
transformers

electric networks
GS networks
electric networks
RT impedance matching
sneak circuit analysis
voltage controlled oscillators

electric outlets
RT xx power transmission

electric potential
DEF In electrostatics, the work done in moving unit positive charge from infinity to the point whose potential is being specified. Used for voltage.
UF voltage
GS potential energy
electric potential
.. bioelectric potential
.. contact potentials
.. Coulomb potential
.. high voltages
.. Lienard potential
.. low voltage
.. open circuit voltage
.. photovoltaics
.. quantum wells
.. photoexcitation
.. spike potentials
.. threshold voltage
RT Esaki diodes
fuses
capacitance-voltage characteristics
electromotive forces
Gibbs-Helmholtz equations
nerve potentials
Kirchhoff law of networks
overvoltage
xx potential
potentiometers (instruments)
power conditioning
static electricity
transconductance
volt-ampere characteristics

xx electric power
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF electrical energy
RT auxiliary power sources
electric batteries
electric current
electric power plants
electric propulsion
electrical properties
electricity
electrification
geothermal energy utilization
hydroelectricity
induction motors
Poynting theorem
tokamak devices
turbogenerators
utilities
voltage converters (AC to AC)
voltage converters (DC to DC)

electric power conversion
USE **electric generators**

electric power plants
GS **electric power plants**
fuel cell power plants
nuclear power plants
.. Enrico Fermi atomic power plant
.. Hallam Nuclear Power Facility
.. MIL-1 nuclear power plant
.. solar thermal electric power plants
RT cogeneration
combined cycle power generation
xx electric power
electrical engineering
xx facilities
flue gases
fly ash
hydroelectric power stations
integrated energy systems
Modular Integrated Utility System
xx power plants
solar sea power plants

electric power supplies
GS **electric power supplies**
aircraft power supplies
solar dynamic power systems
space station power supplies
spacecraft power supplies
RT auxiliary power sources
computations
induction motors
line current
payload delivery (STS)
xx power supplies

electric power transmission
GS transmission
electric power transmission
RT circuit protection
circuits
xx conduction
xx electric equipment
electrical engineering
electrification
hydroelectric power stations
poles (supports)
power lines
xx power transmission
superconducting power transmission
transmission circuits
transmission lines
transmission loss
underground transmission lines

electric propulsion
SN (EXCLUDES PROPULSION USING ELECTRIC MOTORS AS PRIME MOVERS)
DEF A general term encompassing all the various types of propulsion in which the propellant consists of charged electrical particles which are accelerated by electrical or magnetic fields, or both, for example, electrostatic propulsion, electromagnetic propulsion, and electrothermal propulsion.
GS propulsion
electric propulsion
.. electromagnetic propulsion
.... magnetic coils
.. electrostatic propulsion
.... ion propulsion
.. laser propulsion
.. plasma propulsion
.. solar electric propulsion
RT arc jet engines
xx electric power
low thrust propulsion
marine propulsion
nuclear electric propulsion
plasma power sources
RIFT (reactor in flight test)
SERT 1 spacecraft
SERT 2 spacecraft
space station propulsion
spacecraft propulsion
two stage plasma engines
underwater propulsion

electric pulses
UF electric impulses
GS pulses
electric pulses
RT electromagnetic missiles
electromagnetic pulses
pulse amplitude
pulse duration
pulse generators
pulse modulation
pulse rate
xx signals
system generated electromagnetic pulses

electric reactors
GS **electric reactors**
saturable reactors
RT capacitors
circuit protection
xx reactors
resistors
transformers

electric relays
SN (EXCLUDES COMMUNICATION SYSTEM REPEATERS)
GS switches
electric relays
RT armatures
circuit breakers
disconnect devices
interruption
xx relay
selectors
solenoid valves
solenoids
switching circuits
time lag

electric rocket engines
GS engines
rocket engines
electric rocket engines
.... electrostatic engines
.... electrothermal engines
..... arc jet engines
..... plasma engines
..... two stage plasma engines
.... resistojet engines

.....ion engines
.....cesium engines
.....mercury ion engines
.....RIT engines
RT microrocket engines
pulsed jet engines
restartable rocket engines
SERT 1 spacecraft
SERT 2 spacecraft
space electric rocket tests
sustainer rocket engines
Vernier engines

electric sparks
UF spark discharges
GS electric current
.electric discharges
..electric sparks
sparks
.electric sparks
RT flashover
gas discharges
ionization
lightning
spark chambers
spark gaps
spark ignition
spark plugs
static electricity

electric stimuli
RT∞ stimuli

electric switches
GS switches
.electric switches
..cryotrons
..stepping switches
..thermostats
..vacuum arc switches
RT contactors
cryostats
current regulators
dropouts
electronic control
pressure switches
solenoid valves
switching circuits
voltage regulators

electric terminals
RT electric connectors
network analysis
∞ terminals

electric welding
GS welding
.fusion welding
..electric welding
....arc welding
.....gas tungsten arc welding
.....plasma arc welding
....electroslag welding
....flash welding
RT electron beam welding
pressure welding
spot welds
welding machines

electric wire
UF electric wiring
GS conductors
.electric conductors
..electric wire
wire
.electric wire
RT bus conductors
circuits
communication cables
electrical insulation
exploding wires
flat conductors
power lines
transmission lines
wire bridge circuits

electric wiring
USE electric wire
wiring

electrical breakdown
USE electrical faults

electrical conductivity
USE electrical resistivity

electrical conductivity meters
GS measuring instruments
.conductivity meters
..electrical conductivity meters
RT ohmmeters

electrical energy
USE electric power

electrical engineering
RT electric generators
electric power plants
electric power transmission
∞ electronics
∞ engineering
∞ power transmission
systems engineering
transmission lines
turbogenerators

electrical faults
UF electrical breakdown
voltage breakdown
GS electrical faults
.short circuits
RT∞ breakdown
circuit protection
electric arcs
failure
∞ faults
flashover
sneak circuit analysis
spark gaps

electrical grounding
RT circuit protection
circuits
noise reduction
transformers

electrical impedance
UF admittance
immittance
GS electrical properties
.electrical impedance
..electrical resistance
....contact resistance
....skin resistance
....transconductance
..reactance
impedance
.electrical impedance
..electrical resistance
....contact resistance
....skin resistance
....transconductance
..reactance
RT capacitance
impedance matching
impedance measurement
inductance
latch-up
ohmmeters
Smith chart

electrical insulation
DEF A material of relatively low electrical conductivity and high dielectric strength, usually used to support or provide electrical separation for conductors, in which a voltage applied between two points on or within the material produces a small and sometimes negligible current.
UF nonconductors
GS insulation
.electrical insulation
RT asbestos
circuit protection
dielectrics
electric conductors
electric wire
excitons
∞ insulated structures
insulators
wiring

electrical leads
USE electric conductors

electrical measurement
SN (MEASUREMENT OF ELECTRICAL PROPERTIES, QUANTITIES, OR CONDITIONS)
UF voltage measurement
GS electrical measurement
.coulometry
.polarography
RT ammeters
balometers
coulometers
electric bridges
electric equipment tests
electromagnetic measurement
electrometers
electronic equipment tests
flowmeters
impedance measurement
magnetometers
∞ measurement
measuring instruments
microvoltammeters
mismatch (electrical)
ohmmeters
oscillographs
potentiometers (instruments)
wattmeters

electrical properties
UF Bardeen approximation
GS electrical properties
.antiferroelectricity
.capacitance
.capacitance-voltage characteristics
.carrier mobility
..electron mobility
..hole mobility
.charge distribution
.dielectric properties
..permittivity
.electric moments
.electrical impedance
..electrical resistance
....contact resistance
....skin resistance
....transconductance
..reactance
.electrical resistivity
..ionospheric conductivity
..magnetoresistivity
..photoconductivity

. . plasma conductivity
. . superconductivity
. . . Kondo effect
. electrostriction
. ferroelectricity
. inductance
. . proximity effect (electricity)
. photovoltaic effect
. piezoelectricity
. pyroelectricity
RT ∞ conductivity
crystal oscillators
diamagnetism
dipole moments
domains
eddy currents
electric charge
∞ electric power
electricity
electromagnetic properties
field strength
hysteresis
impedance
magnetic properties
open circuit voltage
optical properties
photoelectric emission
photoelectricity
∞ physical properties
∞ properties
quality control
∞ resistance
∞ solid state physics
standing wave ratios

electrical resistance
GS electrical properties
. electrical impedance
. . **electrical resistance**
. . . contact resistance
. . . skin resistance
. . . transconductance
impedance
. electrical impedance
. . **electrical resistance**
. . . contact resistance
. . . skin resistance
. . . transconductance
RT galvanic skin response
∞ high resistance
linear circuits
∞ low resistance
Manganin (trademark)
ohmmeters
Ohms law
RC circuits
reactance
∞ resistance
RL circuits
RLC circuits

electrical resistivity
DEF A factor such that the conduction-current density is equal to the electric field in the material divided by resistivity.
UF electrical conductivity
electroconductivity
resistivity
GS electrical properties
. **electrical resistivity**
. . ionospheric conductivity
. . magnetoresistivity
. . photoconductivity
. . plasma conductivity
. . superconductivity
. . . Kondo effect
transport properties
. **electrical resistivity**
. . ionospheric conductivity
. . magnetoresistivity
. . photoconductivity
. . plasma conductivity
. . superconductivity
. . . Kondo effect
RT air conductivity
atmospheric conductivity
carrier mobility
∞ conductivity
electric conductors
electric current
electromigration
high temperature superconductors
low conductivity
open circuit voltage
plasma currents
∞ resistance

electrically suspended gyroscopes
USE **electrostatic gyroscopes**

electricity
GS **electricity**
. alternating current
. atmospheric electricity
. . ionospheric currents
. . . Birkeland currents
. . . electrojets
. . . . auroral electrojets
. . . . equatorial electrojet
. geoelectricity
. . telluric currents
. hydroelectricity
. static electricity
RT electric current
∞ electric equipment
∞ electric power
electrical properties
electromagnetism
∞ electronics
lightning
Maxwell equation
Ohms law
photoelectricity
piezoelectricity
proximity effect (electricity)

electrification
RT ∞ electric power
electric power transmission
∞ power transmission
transmission lines

electro-optical effect
RT ∞ effects
∞ Kerr effects
light modulation
nonlinear optics
∞ optics

electro-optical photography
UF electronic photography
GS imagery
. photography
. . **electro-optical photography**
RT astronomical photography
black and white photography
image resolution
Lallemand cameras
optical measurement
∞ optics
streak photography

electro-optical switching
USE **optical switching**

electro-optics
GS electrophysics
. **electro-optics**
RT acousto-optics
birefringence
charge injection devices
electrochromism
electroluminescence
electron optics
integrated optics
Kerr electrooptical effect
laser microscopy
light modulators
light valves
magneto-optics
optical computers
optical control
optical relay systems
optical switching
∞ optics
optoelectronic devices
photonics
position sensing
pushbroom sensor modes
Stark effect
tunable filters

electroacoustic transducers
DEF Transducers for receiving waves from an electric system and delivering waves to an acoustic system, or vice versa. Microphones and earphones are electroacoustic transducers.
GS transducers
. sound transducers
. . **electroacoustic transducers**
. . . hydrophones
. . . loudspeakers
. . . microphones
RT electroacoustics
interdigital transducers
surface acoustic wave devices

electroacoustic waves
GS elastic waves
. sound waves
. . **electroacoustic waves**
RT electroacoustics
electromagnetic radiation
plasma waves
pressure sensors
wave interaction
∞ waves

electroacoustics
GS acoustics
. **electroacoustics**
RT electroacoustic transducers
electroacoustic waves
sound transducers
surface acoustic wave devices
ultrasonic wave transducers
ultrasonics

electroanesthesia
GS anesthesia
. **electroanesthesia**
RT electronarcosis

electrocardiograms
USE **electrocardiography**

electrocardiography
UF electrocardiograms
GS bioengineering
. biometrics
. cardiography
. . **electrocardiography**
RT ballistocardiography

body measurement (biology)
electrophysiology
heart diseases
medical electronics
muscles
phonocardiography
vectorcardiography

electrocatalysts
UF *fuel cell catalysts*
GS catalysts
. **electrocatalysts**
RT fuel cells

electrochemical cells
DEF Electrochemical systems consisting of an anode and a cathode in metallic contact and immersed in an electrolyte. (The anode and cathode may be different metals or dissimilar areas on the same metal surface).
GS **electrochemical cells**
. electric batteries
. . lithium sulfur batteries
. . nickel iron batteries
. . primary batteries
. . . alkaline batteries
. . . dry cells
. . . . magnesium cells
. . . . nickel zinc batteries
. . . metal air batteries
. . . . zinc-oxygen batteries
. . . sodium sulfur batteries
. . . thermal batteries
. . Redox cells
. . storage batteries
. . . lead acid batteries
. . . nickel cadmium batteries
. . . nickel hydrogen batteries
. . . nickel zinc batteries
. . . silver cadmium batteries
. . . silver hydrogen batteries
. . . silver zinc batteries
. . . zinc-bromide batteries
. . . zinc-chlorine batteries
. . wet cells
. fuel cells
. . biochemical fuel cells
. . hydrogen oxygen fuel cells
. . molten carbonate fuel cells
. . phosphoric acid fuel cells
. . regenerative fuel cells
. . solid oxide fuel cells
RT cells
cells
electric cells
electrochemistry
photoelectric cells
photoelectrochemical devices
photovoltaic cells

electrochemical corrosion
GS corrosion
. **electrochemical corrosion**
RT electrodissolution
electrolysis
metal-water reactions

electrochemical machining
UF electrolytic grinding
GS machining
. chemical machining
. . **electrochemical machining**
RT electropolishing

electrochemical oxidation
GS chemical reactions
. oxidation
. . **electrochemical oxidation**

electrochemistry
DEF The branch of science and technology which deals with transformations between chemical and electrical energy.
GS **electrochemistry**
. electrolysis
. . coulometry
. photoelectrochemistry
RT chemistry
corrosion
coulometers
electrochemical cells
electrochromism
electrodeposition
electrodes
electrodissolution
electrolytes
electrolytic cells
electrophysics
fuel cells
glass electrodes
nonaqueous electrolytes
oxidation-reduction reactions
Redox cells

electrochromism
DEF A phenomenon whereby a select number of solid materials will change color when an electric field is applied.
RT chromophores
color
display devices
electrochemistry
electro-optics
thin films

electroconductivity
USE **electrical resistivity**

electrocutaneous communication
GS communicating
. **electrocutaneous communication**
RT perception
sensory perception
touch

electrode dark current
USE **dark current**

electrode film barriers
RT barriers
electrodes
films
polarization (charge separation)
thin films

electrode materials
RT anions
anodes
anodic coatings
cathodes
cathodic coatings
cell anodes
cell cathodes
electrodes
photocathodes
photoelectric cells
photoelectric materials
photoelectrochemical devices
polypyrroles
tube anodes

electrodeless discharges
GS electric current
. electric discharges
. . **electrodeless discharges**
RT discharge
gas discharges
glow discharges
lightning
Penning discharge
radio frequency discharge
ring discharge
toroidal discharge
Townsend discharge

electrodeposition
GS deposition
. **electrodeposition**
. . electroplating
RT cathodic coatings
cell cathodes
coulometers
electrochemistry
electroforming
electroless deposition
electrolysis
electrolytes
electrolytic cells
electrophoresis
electrowinning
metal matrix composites
metal powder
plating
powder metallurgy
reduction (chemistry)

electrodermal response
USE **galvanic skin response**

electrodes
DEF Terminals at which electricity passes from one medium into another. The positive electrodes are called the anodes; the negative electrodes are called the cathodes. In semiconductor devices, elements that perform one or more of the functions of emitting or collecting electrons or holes, or of controlling their movements by electric fields. In electron tubes, conducting elements that perform one or more of the functions of emitting, collecting, or controlling by electromagnetic fields, the movements of electrons or ions.
GS **electrodes**
. anodes
. . cell anodes
. . shell anodes
. . tube anodes
. cathodes
. . cell cathodes
. . hollow cathodes
. . tube cathodes
. . . cold cathodes
. . . hot cathodes
. . . photocathodes
. . . thermionic cathodes
. . . tunnel cathodes
. diffusion electrodes
. dynodes
. glass electrodes
. implanted electrodes (biology)
. ion selective electrodes
. plasma electrodes
. solid electrodes
. tube grids
RT cold cathode tubes
electric batteries
electrochemistry
electrode film barriers
electrode materials
electrolysis
electroplating
electrorefining
electrowinning
graphite

photomultiplier tubes
phototubes
Tafel law
transconductance

electrodialysis
GS dialysis
. **electrodialysis**
RT colloids
hydrometallurgy
∞ separation

electrodissolution
RT dissociation
electrochemical corrosion
electrochemistry
electrolysis

electrodynamics
DEF The science dealing with the forces and energy transformations of electric currents and the magnetic fields associated with them.
GS **electrodynamics**
. electrohydrodynamics
. electromechanics
. quantum electrodynamics
RT Born-Infeld theory
∞ dynamics
- electric fields
electromagnetic interactions
electromechanical devices
line current
Maxwell equation
ponderomotive forces
traveling charge

electrodynamometers
USE **dynamometers**

electroencephalogram
USE **electroencephalography**

electroencephalography
UF *EEG (electroencephalograms)*
electroencephalogram
GS bioengineering
. biometrics
. . **electroencephalography**
RT arousal
body measurement (biology)
brain
electrophysiology
medical electronics
medical equipment

electroepitaxy
DEF Crystal growth process achieved by passing an electric current through the substrate solution.
GS growth
. crystal growth
. . epitaxy
. . . **electroepitaxy**
RT crystals
hydrothermal crystal growth
liquid phases
traveling solvent method

electroerosion
USE **spark machining**

electroexplosive devices
USE **initiators (explosives)**

electroforming
GS forming techniques
. **electroforming**
RT deposition
electrodeposition
electroless deposition
electroplating
spark machining

electrogenerators
USE **electric generators**

electrohydraulic control
USE **electric control**
hydraulic control

electrohydraulic forming
GS forming techniques
. cold working
. . **electrohydraulic forming**
RT explosive forming
metal working

electrohydrodynamics
GS electrodynamics
. **electrohydrodynamics**
fluid mechanics
. fluid dynamics
. . hydrodynamics
. . . **electrohydrodynamics**
. hydromechanics
. . hydrodynamics
. . . **electrohydrodynamics**
RT electric corona
electrokinetics
electron gas
electron mobility
ion distribution
ionic mobility
magnetohydrodynamics

electrojets
DEF Laterally limited, relatively intense electric currents located in the ionosphere.
GS electric current
. ionospheric currents
. . **electrojets**
. . . auroral electrojets
. . . equatorial electrojet
electricity
. atmospheric electricity
. . ionospheric currents
. . . **electrojets**
. . . . auroral electrojets
. . . . equatorial electrojet
RT Birkeland currents
Earth ionosphere
geomagnetism
ionospheric conductivity
ionospheric drift
ring currents

electrokinetics
GS kinetics
. **electrokinetics**
RT electrohydrodynamics
electromagnetic fields
electromechanics
electrophysics

electroless deposition
DEF Controlled autocatalytic reduction method of depositing coatings.
GS deposition
. **electroless deposition**
RT coatings
electrodeposition
electroforming
metal coatings
plating
vacuum deposition
vapor deposition

electroluminescence
DEF Emission of light caused by an application of electric fields to solids or gases. In gas electroluminescence, light is emitted when the kinetic energy of electron or ions accelerated in an electric field is transferred to the atoms or molecules of the gas in which the discharge takes place. Used for electroluminescent lamps.
UF *electroluminescent lamps*
GS emission
. light emission
. . luminescence
. . . **electroluminescence**
RT electro-optics
light emitting diodes
light sources
porous silicon

electroluminescent lamps
USE **electroluminescence**
luminaires

electrolysis
DEF The production of chemical changes by the passage of current through an electrolyte.
GS electrochemistry
. **electrolysis**
. . coulometry
RT corrosion
coulometers
cracking (chemical engineering)
current density
decomposition
electrochemical corrosion
electrodeposition
electrolaser
electrodissolution
electrolytes
electrolytic cells
electroplating
hydrogen production
ionic mobility
metathesis
passivity
photolysis
reduction (chemistry)
Tafel law
water splitting

electrolyte metabolism
GS metabolism
. **electrolyte metabolism**
RT aerospace medicine
aldosterone
blood plasma
body fluids
physiological effects
potassium
sodium
weightlessness

electrolytes
GS conductors
. **electrolytes**
. . anolytes
. . catholytes
. . ion exchange membrane electrolytes
. . jumpers
. . molten salt electrolytes
. . nonaqueous electrolytes
. . solid electrolytes
RT conducting fluids
Debye-Huckel theory
electric batteries
electrochemistry
electrodeposition
electrolysis

electrolytic cells
electroplating
electrorefining
electrowinning
fuel cells
ions
nonelectrolytes
primary batteries
Redox cells
storage batteries
wet cells

electrolytic cells
DEF Unit apparatus in which electrochemical reactions are produced by applying electrical energy, or which supply electrical energy as a result of chemical reactions and which include two or more electrodes and one or more electrolytes contained in a suitable vessel. Used for galvanic cells.
UF galvanic cells
RT∞ cells
∞ diaphragms
diaphragms (mechanics)
diffusion electrodes
electric batteries
∞ electric cells
electrochemistry
electrodeposition
electrolysis
electrolytes
electroplating
electrorefining
electrowinning
ionic mobility
lead acid batteries
nonaqueous electrolytes
phosphoric acid fuel cells

electrolytic grinding
USE electrochemical machining

electrolytic polarization
GS polarization (charge separation)
. electrolytic polarization
RT depolarization
magnesium cells

electrolytic polishing
USE electropolishing

electromagnetic absorption
UF *ionospheric absorption*
light absorption
magnetic absorption
optical absorption
GS energy absorption
. radiation absorption
. . electromagnetic absorption
. . . auroral absorption
. . . gamma ray absorption
. . . infrared absorption
. . . microwave absorption
. . . multiphoton absorption
. . . photoabsorption
. . . polar cap absorption
. . . ultraviolet absorption
. . . x ray absorption
RT absorbers (materials)
absorptance
∞ absorption
absorption spectra
absorptivity
activation
atmospheric attenuation
attenuation
Beer law
Bouguer law
Chandrasekhar equation
electromagnetic properties
excitation
fading
fluorescence
gamma ray absorptiometry
irradiation
laser induced fluorescence
light scattering
molecular absorption
Mossbauer effect
nuclear physics
opacity
optical properties
optical reflection
pair production
photodecomposition
photodissociation
photon absorptiometry
photoproduction
radar absorbers
radar attenuation
radiation shielding
radio attenuation
reflection
resonant frequencies
signal fading
solar energy absorbers
Townsend avalanche
transmission
transmittance
transparence
wave attenuation
wave propagation

electromagnetic acceleration
DEF The use of perpendicular components of electric and magnetic fields to accelerate a current carrier.
RT∞ acceleration
electromagnetic interactions
magnetic fields
mass drivers
particle acceleration
plasma accelerators

electromagnetic compatibility
GS compatibility
. electromagnetic compatibility
RT atmospherics
crosstalk
electronic countermeasures
electronic warfare
∞ interference
noise spectra
radio frequency interference

electromagnetic control
USE electromagnetic
remote control

electromagnetic coupling
(added September 1988)
GS coupling
. electromagnetic coupling
. . microwave coupling
. . optical coupling
RT electromagnetic interactions
laser plasma interactions
magnetosphere-ionosphere coupling
plasma-electromagnetic interaction

electromagnetic deduction
USE magnetic induction

electromagnetic environment experiment
DEF Shuttleborne radio frequency experiment.
GS payloads
. Space Shuttle payloads
. . electromagnetic environment experiment

electromagnetic fields
GS electromagnetic fields
. far fields
. near fields
. system generated electromagnetic pulses
RT Abrikosov theory
biomagnetism
blackout (propagation)
electrokinetics
electromagnetism
electromechanics
external surface currents
field mode theory
field strength
field theory (physics)
grand unified theory
magnetic field configurations
magnetic field inversions
magnetic fields
quantum electrodynamics
reciprocity theorem
solar magnetic field
Sommerfeld approximation
squeezed states (quantum theory)
stellar magnetic fields
unified field theory
whistlers
Yang-Mills fields

electromagnetic hammers
GS tools
. hammers
. . electromagnetic hammers
RT forming techniques
magnetic coils
magnetic forming
metal working

electromagnetic interactions
GS electromagnetic interactions
. photoproduction
. plasma-electromagnetic interaction
. . laser plasma interactions
RT biomagnetism
electrodynamics
electromagnetic acceleration
electromagnetic coupling
electrostatics
electroweak interactions (field theory)
electroweak model
elementary particle interactions
Feynman diagrams
grand unified theory
∞ interactions
. meson-meson interactions
. photonuclear reactions
plasma resonance
quantum mechanics
unified field theory
wave interaction
wave-particle interactions

electromagnetic interference
GS electromagnetic interference
. crosstalk
. . ionospheric cross modulation
. jamming
. radio frequency interference

... blackout (propagation)
.... polar radio blackout
... chirp
.... chirp signals
... electromagnetic noise
.... atmospherics
..... ionospherics
..... dawn chorus
..... hiss
.... sudden enhancement of atmospherics
.... whistlers
.... cosmic noise
.... ionospheric noise
..... whistlers
.... shot noise
.... white noise
..... thermal noise
... ionospheric cross modulation
RT ∞ disturbances
electronic countermeasures
electronic warfare
environments
feedback
ground effect (communications)
∞ interference
interference immunity
noise reduction
SCATHA satellite
signal to noise ratios
system generated electromagnetic pulses

electromagnetic measurement
SN (MEASUREMENT OF ELECTROMAGNETIC PROPERTIES, QUANTITIES OR CONDITIONS)
GS electromagnetic measurement
.. electromagnetic noise measurement
RT Barkhausen effect
Earth terminal measurement system
electrical measurement
electromagnetism
infrared detectors
magnetic measurement
magnetic transducers
∞ measurement
signal measurement

electromagnetic missiles
(added January 1992)
RT electric pulses
external surface currents
missiles
picosecond pulses
pulse communication
pulse modulation
wave attenuation
wave degradation
wave propagation

electromagnetic noise
UF radiation noise
radio frequency noise
GS electromagnetic interference
.. radio frequency interference
... electromagnetic noise
.... atmospherics
..... ionospherics
..... dawn chorus
..... hiss
.... sudden enhancement of atmospherics
.... whistlers
.... cosmic noise
.... ionospheric noise
..... whistlers
.... shot noise
.... white noise
..... thermal noise
RT background noise
background radiation
blackout (propagation)
channel noise
chirp signals
extraterrestrial radiation
ground effect (communications)
microwaves
millimeter waves
∞ noise
noise generators
noise intensity
noise reduction
noise spectra
noise storms
noise temperature
radar receivers
∞ radiation
radio receivers
radio spectra
radio waves
random noise
signal to noise ratios
solar radio emission
squelch circuits
submillimeter waves

electromagnetic noise measurement
GS electromagnetic measurement
.. electromagnetic noise measurement
RT cosmic noise
∞ measurement
thermal noise
white noise

electromagnetic propagation
USE electromagnetic wave transmission

electromagnetic properties
GS electromagnetic properties
.. Faraday effect
.. inductance
... proximity effect (electricity)
.. Kerr magnetooptical effect
.. magnetoresistivity
.. optical properties
... absorptance
... absorptivity
... birefringence
.... Kerr electrooptical effect
... brightness
.... sky brightness
... brightness distribution
... color
.... iridescence
.... stellar color
.... water color
... dichroism
... luminosity
.... stellar luminosity
... opacity
... optical bistability
... optical reflection
... phosphorescence
... photoconductivity
... photoviscoelasticity
... radiance
... reflectance
.... bidirectional reflectance
.... spectral reflectance
... refractivity
.... photorefractivity
... stigmation
... translucence
... transmissivity
... transmittance
... transparence
... turbidity
.. photoelasticity
... photoviscoelasticity
RT carrier mobility
clarity
electrical properties
electromagnetic absorption
gamma ray absorption
gyrotropism
magnetic properties
∞ physical properties
polarization (waves)
∞ properties

electromagnetic propulsion
GS propulsion
.. electric propulsion
... electromagnetic propulsion
.... magnetic sails
.. low thrust propulsion
... electromagnetic propulsion
.... magnetic sails
.. spacecraft propulsion
... electromagnetic propulsion
.... magnetic sails
RT electrostatic propulsion
ion propulsion
mass drivers
photonic propulsion
plasma propulsion

electromagnetic pulses
UF *EMP (electromagnetism)*
GS electromagnetic radiation
.. electromagnetic pulses
... system generated electromagnetic pulses
.. pulsed radiation
... electromagnetic pulses
.... system generated electromagnetic pulses
.. pulses
... electromagnetic pulses
.... system generated electromagnetic pulses
RT electric pulses
external surface currents
picosecond pulses
pulse communication
pulse modulation
pulse radar
radar transmission

electromagnetic pumps
SN (ENCOMPASSES DEVICES FOR MATERIALS HANDLING ONLY—EXCLUDES OPTICAL AND PARTICLE ENERGIZING DEVICES)
GS pumps
.. electromagnetic pumps
RT fuel pumps

electromagnetic radiation
DEF Energy propagated through space or through material media in the form of an advancing disturbance in electric and magnetic fields existing in space or in media. The term radiation, alone, is used commonly for this type of energy, although it actually has a broader meaning. Used for electromagnetic waves and wave radiation.
UF electromagnetic waves
wave radiation
GS electromagnetic radiation
.. bremsstrahlung

. Cerenkov radiation
. coherent electromagnetic radiation
.. coherent light
.. laser beams
. diffraction radiation
. electromagnetic pulses
.. system generated electromagnetic pulses
. electromagnetic surface waves
. gamma ray beams
. gamma rays
.. gamma ray bursts
. H waves
. infrared radiation
.. far infrared radiation
.. near infrared radiation
. kilometric waves
. light (visible radiation)
.. coherent light
.. gegenschein
.. polarized light
.. sky radiation
.... airglow
..... geocoronal emissions
..... nightglow
..... twilight glow
.... dayglow
.. sunlight
.. zodiacal light
. light beams
.. laser beams
. modulated continuous radiation
. monochromatic radiation
. nonequilibrium radiation
. nonthermal radiation
.. cyclotron radiation
... ion cyclotron radiation
.. synchrotron radiation
. photon beams
. planetary radiation
. plasmons
. polarized electromagnetic radiation
.. polarized light
.. synchrotron radiation
. radio waves
.. dekametric waves
.. extraterrestrial radio waves
... galactic radio waves
..... North Polar Spur (astronomy)
... radio bursts
..... solar radio bursts
..... type 2 bursts
..... type 3 bursts
..... type 4 bursts
..... type 5 bursts
... solar radio emission
..... solar radio bursts
..... type 2 bursts
..... type 3 bursts
..... type 4 bursts
..... type 5 bursts
.. long wave radiation
.. radio emission
... CN emission
... hydroxyl emission
... radio bursts
..... solar radio bursts
..... type 2 bursts
..... type 3 bursts
..... type 4 bursts
..... type 5 bursts
... solar radio emission
..... solar radio bursts
..... type 2 bursts
..... type 3 bursts
..... type 4 bursts
..... type 5 bursts
.. short wave radiation
..... microwaves
..... centimeter waves
..... decimeter waves
..... microwave emission
..... millimeter waves
..... submillimeter waves
.. sky waves
... whistlers
. Sommerfeld waves
. terrestrial radiation
. thermal radiation
.. black body radiation
.. phonon beams
. tropospheric radiation
. ultraviolet radiation
.. extreme ultraviolet radiation
.. far ultraviolet radiation
... Lyman alpha radiation
... Lyman beta radiation
.. near ultraviolet radiation
.. ultraviolet emission
. x rays
.. cosmic x rays
.. solar x-rays

RT aerospace environments
antennas
atmospheric radiation
atmospheric refraction
backward waves
beams (radiation)
coherent radiation
continuous radiation
corpuscular radiation
cosmic rays
cylindrical waves
diffraction
Doppler effect
duochromatons
electroacoustic waves
electromagnetism
extraterrestrial radiation
far fields
flux (rate)
flux density
galactic radiation
gamma ray absorption
gauge invariance
glare
harmonic radiation
incident radiation
incoherent scattering
interstellar radiation
ionizing radiation
Kerr electrooptical effect
light emission
magneto-optics
near fields
nonlinear optics
nuclear radiation
phase velocity
photons
Planck's constant
polarized radiation
Poynting theorem

= propagation
propagation velocity
pulsed radiation
radar

= radiation
radiation chemistry
radiation distribution
radiation hazards
radiation laws
radiation pressure
radiation sources
radiative transfer

= rays
reflected waves
refraction
refracted waves
Rorchi test
scattering
sine waves
solar radiation
solitary waves
spectral emission
spectral energy distribution
spherical waves
spontaneous emission
Stefan-Boltzmann law
stellar radiation
stratosphere radiation
telecommunication
Thomson scattering
transmission
transverse waves
traveling waves
ultraviolet astronomy
VLF emission recorders
wave amplification
wave dispersion
wave generation

= waves
whispering gallery modes
white holes (astronomy)

electromagnetic scattering
GS scattering
. wave scattering
.. electromagnetic scattering
.... ionospheric F-scatter propagation
.... light scattering
..... halos
.... microwave scattering
.... Mie scattering
..... Rayleigh scattering
.... Raman spectra
.... Thomson scattering
.... x ray scattering
RT atmospheric attenuation
atmospheric scattering
magnetic dispersion
reciprocity theorem

electromagnetic shielding
GS shielding
. electromagnetic shielding
.. radio frequency shielding
RT magnetic shielding
radiation shielding

electromagnetic spectra
DEF Spectra of known electromagnetic radiations, extending from the shortest cosmic rays, through gamma rays, x rays, ultraviolet radiation, visible radiation, and including microwave and all other wavelengths of radio energy.
GS spectra
. radiation spectra
.. electromagnetic spectra
.... gamma ray spectra
.... infrared spectra
.... line spectra
..... Balmer series
..... D lines
..... electronic spectra
..... Fraunhofer lines
..... H lines
...... H alpha line
...... H beta line
...... H gamma line

.....K lines
.....Lyman spectra
.....Paschen series
.....Rydberg series
.....telluric lines
....radio spectra
.....microwave spectra
....Raman spectra
....stellar spectra
.....solar spectra
....UBV spectra
....ultraviolet spectra
....vibrational spectra
....visible spectrum
....x-ray spectra
RT absorption spectra
astronomical spectroscopy
electronic warfare
emission spectra
energy spectra
light (visible radiation)
molecular spectra
noise spectra
spectral correlation
spectral reconnaissance

electromagnetic surface waves
GS electromagnetic radiation
..electromagnetic surface waves
surface waves
..electromagnetic surface waves
RT dielectrics
propagation modes
radio waves
= surfaces
waveguides
= waves

electromagnetic wave filters
GS electromagnetic wave filters
..bandpass filters
...crystal filters
...tracking filters
..electric filters
...bandstop filters
...crystal filters
...digital filters
....FIR filters
...microwave filters
...radar filters
...radio filters
...tracking filters
...waveguide filters
..matched filters
..optical filters
...birefringent filters
...infrared filters
...ultraviolet filters
RT absorbers (materials)
adaptive filters
attenuators
correlation detection
= filters
high pass filters
linear filters
low pass filters
nonlinear filters
screen effect

electromagnetic wave transmission
UF electromagnetic propagation
GS transmission
..electromagnetic wave transmission
...light transmission
....light scattering
.....halos
...microwave attenuation
...radar transmission
...radio transmission
....double sideband transmission
....ionospheric propagation
.....ionospheric F-scatter propagation
....microwave transmission
....multipath transmission
....short wave radio transmission
....single sideband transmission
....spread spectrum transmission
....transequatorial propagation
....transhorizon radio propagation
...scatter propagation
....ionospheric F-scatter propagation
...television transmission
RT atmospheric attenuation
attenuation
Fermat principle
incoherent scattering
lossy media
magnetooptics
plasma decay
plasmaguides
radar attenuation
radio attenuation
radome materials
screen effect
transmission efficiency
wave propagation
whispering gallery modes

electromagnetic waves
USE electromagnetic radiation

electromagnetics
USE electromagnetism

electromagnetism
DEF Magnetism produced by an electric current. The science dealing with the physical relations between electricity and magnetism. Used for electromagnetics.
UF electromagnetics
GS electromagnetism
..magnetoelectricity
RT Barkhausen effect
computational electromagnetics
electric fields
electricity
electromagnetic fields
electromagnetic measurement
electromagnetic radiation
electromagnets
electrophysics
grand unified theory
magnet coils
magnetic coils
magnetic field inversions
magnetic fields
magnetic properties
magnetoresistivity
unified field theory

electromagnets
UF electromagnetic control
GS magnets
..electromagnets
...high field magnets
...superconducting magnets
RT electromagnetism
field coils
magnet coils
racetracks (particle accelerators)
solenoids

electromechanical devices
RT = electric equipment
electrodynamics
electromechanics
= equipment
homopolar generators

electromechanics
GS electrodynamics
..electromechanics
RT circuits
electric fields
electrokinetics
electromagnetic fields
electromechanical devices
e-statistics
magnetic field inversions
magnetic fields
Maxwell equation
= mechanics (physics)

electrometers
DEF Instruments for measuring differences of electric potential.
GS measuring instruments
..electrometers
RT electric charge
electrical measurement
electron counters
galvanometers
potentiometers (instruments)
voltmeters
wattmeters

electromigration
RT electrical resistivity
electron mobility
hole mobility
ionic mobility
polarization (charge separation)
thermomigration

electromotive forces
DEF Forces capable of maintaining a potential difference, and thus a current, within a circuit. They can be established by chemical action or by mechanical work.
GS electromotive forces
..ponderomotive forces
RT electric batteries
electric generators
electric potential
Ohms law
open circuit voltage

electromyograms
USE electromyography

electromyographs
USE electromyography

electromyography
DEF The study of the response of a muscle to an electric stimulation. Used for electromyograms and electromyographs.
UF electromyograms
electromyographs
GS bioengineering
..biometrics
...electromyography
RT electrophysiology
medical electronics
myoelectricity

electron acceleration
DEF The acceleration of electrons by action of solar cosmic rays.
GS rates (per time)
..acceleration (physics)
...electron acceleration
RT = acceleration
cosmic rays

electrons
extraterrestrial radiation
particle beams
solar cosmic rays

electron accelerators
GS particle accelerators
. electron accelerators
. . betatrons
RT cyclotrons
linear accelerators
synchrotrons
Van de Graaff accelerators

electron affinity
GS affinity
. electron affinity
RT anions
molecular ions
negative electron affinity
semiconductors (materials)

electron attachment
GS electron attachment
. nucleophiles
RT attachment
gas ionization
ionization

electron avalanche
DEF The process in which a relatively small number of free electrons in a gas that is subjected to a strong electric field accelerate, ionize gas atoms by collision, and thus form new free electrons to undergo the same process in cumulative fashion.
GS avalanches
. electron avalanche
RT CATT devices
channel multipliers
free electrons
gas discharges
Townsend avalanche

electron beam welding
GS welding
. fusion welding
. . electron beam welding
RT arc welding
electric welding
epilog

electron beams
DEF Specifically, focused streams of electrons used for neutralization of the positively charged ion beam in an ion engine. Also used to melt or weld materials with extremely high melting points.
GS beams (radiation)
. particle beams
. . electron beams
. . . relativistic electron beams
particles
. corpuscular radiation
. . electron radiation
. . . electron beams
. . . . relativistic electron beams
RT beam injection
beam neutralization
beam plasma amplifiers
beta particles
Brillouin flow
diffraction radiation
electron cyclotron heating
ionizing radiation
magnetic lenses
monoscopes
plasma jets
scalloping
scanning electron microscopy
transmission electron microscopy

electron bombardment
RT ion bombardment
deposition
particle beams
plasma jets
relativistic electron beams
sputtering

electron bunching
GS bunching
. electron bunching
RT cavities
convection currents
klystrons
traveling wave tubes
velocity modulation

electron capture
GS nuclear reactions
. nuclear interactions
. . nuclear capture
. . . electron capture
. . spin-orbit interactions
. . . electron capture
particle interactions
. elementary particle interactions
. . nuclear capture
. . . electron capture
. nuclear interactions
. . nuclear capture
. . . electron capture
. . spin-orbit interactions
. . . electron capture
spin
. spin-orbit interactions
. . electron capture
RT capture effect
many electron effects

electron clouds
RT ion clouds
orbitrons
space charge

electron collisions
USE electron scattering

electron compounds
USE intermetallics

electron counters
UF electron detectors
GS measuring instruments
. counters
. . radiation counters
. . . electron counters
. radiation measuring instruments
. . radiation counters
. . . electron counters
RT electrometers
ionization chambers

electron cyclotron heating
DEF A type of radio frequency plasma heating in which high-power microwave energy is introduced into the plasma region.
GS heating
. plasma heating
. . electron cyclotron heating
RT electron beams
electron cyclotron resonance
electron guns
klystrons
magnetic pumping

electron cyclotron resonance
(added June 1987)
GS resonance
. cyclotron resonance
. . electron cyclotron resonance
RT cyclotron resonance devices
electron cyclotron heating
plasma heating
plasma resonance

electron decay rate
GS rates (per time)
. decay rates
. . electron decay rate
RT muons
secondary cosmic rays

electron density (concentration)
GS density (number/volume)
. particle density (concentration)
. . electron density (concentration)
. . . carrier density (solid state)
. . . electron density profiles
. . . ionospheric electron density
. . . magnetospheric electron density
RT atmospheric composition
atmospheric density
atom concentration
free electrons
ion density (concentration)
plasma density
plasma frequencies
radiation belts
semiconductors (materials)
space density

electron density profiles
GS density (number/volume)
. particle density (concentration)
. . electron density (concentration)
. . . electron density profiles
. . electron distribution
. . . electron density profiles
distribution (property)
. electron distribution
. . electron density profiles
gradients
. electron density profiles
RT angular distribution
atmospheric electricity
atmospheric ionization

electron detectors
USE electron counters

electron diffraction
DEF The phenomenon, or the technique of producing diffraction patterns through the incidence of electrons as a function of kinetic energy.
GS diffraction
. electron diffraction
RT Bragg angle
diffraction radiation
x ray diffraction

electron diffusion
GS diffusion
. particle diffusion
. . electron diffusion
RT ambipolar diffusion
diffusion length
diffusion waves
gaseous self-diffusion
ionic diffusion
plasma diffusion
thermal diffusion

electron distribution
GS density (number/volume)
. particle density (concentration)
. . electron distribution
. . . electron density profile
distribution (property)
. electron distribution
. . electron density profiles
RT charge distribution
current distribution
Thomas-Fermi model
vertical distribution

electron emission
GS emission
. particle emission
. . electron emission
. . . field emission
. . . photoelectric emission
. . . secondary emission
RT cathodes
electric discharges
emitters
negative electron affinity
pair production
photoelectric materials
photoelectron spectroscopy
photoelectrons
photoionization
radio frequency discharge
self sustained emission
stimulated emission
thermal emission
thermionic emission
thermionics
work functions

electron energy
UF electron temperature
electronic levels
GS particle energy
. electron energy
. . electron states
RT activation energy
electrostatic probes
= energy
forbidden bands
Hartree-Fock-Slater method
interfacial energy
ionospheric temperature
kinetic energy
noise temperature
plasmas (physics)
proton energy
space temperature
surface energy
temperature

electron flux
USE electrons
flux (rate)

electron flux density
SN LIMITED TO ELECTRON EMISSION OR DETECTION RATE PER UNIT AREA
UF electron intensity
GS rates (per time)
flux density
. . radiant flux density
. . . particle flux density
. . . . electron flux density
RT irradiance
radiancy
solar flux density

electron gas
RT cosmic gases
electrohydrodynamics
free electrons
ionized gases
plasmons
rarefied gases
screen effect
superconductors (materials)

electron guns
DEF Electrode structures which produce and may control, focus, deflect, and converge one or more electron beams.
RT cathode ray tubes
crossed field guns
electron cyclotron heating
flying spot scanners
= guns
magnetic lenses
particle accelerators
plasma guns
tube anodes
tube cathodes
tube grids

electron holes
USE holes (electron deficiencies)

electron impact
GS impact
. electron impact
RT ion impact
point impact
proton impact

electron intensity
USE electron flux density

electron interactions
USE electron scattering

electron ionization
USE ionization

electron irradiation
GS irradiation
. electron irradiation
RT auroral irradiation
ion irradiation
secondary emission

electron mass
GS mass
. particle mass
. . electron mass
RT electrons

electron microscopes
GS microscopes
. electron microscopes
RT field emission
ion microscopes
magnetic lenses
microanalysis
optical microscopes
photomicrography
replicas
scanning electron microscopy
scanning tunneling microscopy

electron microscopy
DEF The interpretive application of an electron microscope for the magnification of materials that cannot be properly seen with an optical microscope.
GS microscopy
. electron microscopy
. . scanning electron microscopy
. . scanning tunneling microscopy
. . transmission electron microscopy
RT field emission
ion microscopes
magnetic lenses
microanalysis
phase contrast

electron mobility
GS electrical properties
. carrier mobility
. . electron mobility
mobility
. carrier mobility
. . electron mobility
transport properties
. carrier mobility
. . electron mobility
RT ambipolar diffusion
atomic mobilities
charge carriers
electrohydrodynamics
electromigration
high electron mobility transistors
hole mobility
majority carriers
minority carriers
modulation doping
NDM semiconductor devices
semiconductor plasmas
= solid state physics
square wells

electron multipliers
USE photomultiplier tubes

electron optics
DEF The science that deals with the propagation of electrons, as light optics deals with light and its phenomena.
RT beam switching
Brillouin flow
cathode ray tubes
electron optics
flying spot scanners
= optics
particle trajectories
steering

electron orbitals
GS orbitals
. electron orbitals
RT configuration interaction
excimers

electron oscillations
GS oscillations
. electron oscillations
RT oscillator strengths
plasma oscillations
transient oscillations

electron paramagnetic resonance
UF electron spin resonance
GS resonance
. magnetic resonance
. . paramagnetic resonance
. . . electron paramagnetic resonance
RT Jahn-Teller effect

electron paths
USE electron trajectories

electron phonon interactions
RT = interactions
particle interactions
plasma-particle interactions
polarons
superconductivity
thermodynamic coupling

electron photography
QS imagery
. photography
. . electron photography
RT black and white photography

electron photon cascades
RT bremsstrahlung
=> cascades
cosmic ray showers
pair production
secondary cosmic rays

electron plasma
QS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . electron plasma
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . electron plasma
RT electron-positron plasmas
helium plasma
high temperature plasmas
Landau damping
metallic plasmas
plasma waves
plasma-particle interactions
rarefied plasmas
relativistic plasmas
thermal plasmas

electron precipitation
QS particle precipitation
. electron precipitation
particles
. corpuscular radiation
. . electron precipitation
RT aurorae
=> precipitation
proton precipitation
radiation belts
secondary cosmic rays
trapped particles

electron pressure
QS pressure
. radiation pressure
. . electron pressure

electron probes
DEF Narrow beams of electrons used to scan or illuminate an object or screen.
QS measuring instruments
. electron probes
RT chemical analysis
irradiation
microwave plasma probes
spectrometers

electron pumping
RT energy transfer
excimer lasers
gas lasers
lasers
nuclear pumping
nuclear radiation
optical pumping
population inversion
=> pumping
stimulated emission
stimulated emission devices

electron radiation
SN (LIMITED TO RADIATION CONSISTING OF ELECTRONS--EXCLUDES ELECTROMAGNETIC RADIATION)
QS particles
. corpuscular radiation
. . electron radiation
. . . beta particles
. . . electron beams
. . . . relativistic electron beams
RT bremsstrahlung
nuclear radiation
plasma radiation
proton irradiation
=> radiation
radiation effects

electron recombination
QS recombination reactions
. electron recombination
. . radiative recombination
RT ion recombination
neutral particles

electron ring accelerators
USE storage rings (particle accelerators)

electron runaway (plasma physics)
DEF High acceleration of electrons in a collisional plasma caused by a suddenly applied electric field (which greatly reduces the collision cross section of the electrons).
QS scattering
. electron scattering
. . electron runaway (plasma physics)
RT collisional plasmas
high acceleration
plasma physics
scattering cross sections

electron scattering
UF electron collisions
electron interactions
QS scattering
. electron scattering
. . electron runaway (plasma physics)
RT atomic collisions
dense plasmas
elastic scattering
inelastic scattering
ion scattering
many electron effects
nuclear reactions
nuclear scattering
particle interactions
photon-electron interaction
Ramsauer effect
recoil ions
relativistic electron beams
transmission electron microscopy
Umklapp process

electron sources
RT=> energy sources
ion sources
=> power supplies
radiation sources
=> sources

electron spectroscopy
DEF The study and interpretation of atomic, molecular, and solid state structure based on x-ray induced electron emission from substances.
QS spectroscopy
. electron spectroscopy
RT absorption spectra
emission spectra
infrared spectroscopy
molecular spectroscopy
optical emission spectroscopy
x ray absorption

electron spin
QS spin
. particle spin
. . electron spin
RT angular momentum
nuclear spin
spin dynamics

electron spin resonance
USE electron paramagnetic resonance

electron states
QS level (quantity)
. energy levels
. . electron states
particle energy
. electron energy
. . electron states
RT excimers
excitation
ground state
many electron effects
noise temperature

electron sweeping
USE sweep frequency

electron telescopes
USE particle telescopes

electron temperature
USE electron energy

electron trajectories
DEF The paths of electrons. Used for electron paths.
UF electron paths
QS trajectories
. particle trajectories
. . electron trajectories
RT diffraction paths
magnetic rigidity
radiation belts

electron transfer
RT backward wave tubes
charge exchange
charge transfer
oxidation
transferred electron devices
tunneling

electron transitions
RT atomic theory
Auger effect
Auger spectroscopy
Balmer series
band structure of solids
Bohr theory
conduction bands
excimers
excitation
forbidden transitions
Franck-Condon principle
Jahn-Teller effect
lasing
many electron effects
nuclear capture
optical transition
oscillator strengths
Paschen series
Rydberg series
=> transition
transition probabilities
x ray lasers

xenon chloride lasers
xenon fluoride lasers

electron tubes
DEF Devices in which conduction by electrons takes place through a vacuum or gaseous medium within a gas tight envelope.
GS electron tubes
. camera tubes
. . image dissector tubes
. . orthicons
. . . image orthicons
. . vidicons
. . . return beam vidicons
. . . thermicons
. cold cathode tubes
. . phototubes
. . . photomultiplier tubes
. . . . frequency modulation photomultipliers
. gas discharge tubes
. . ignitrons
. . thyratrons
. image tubes
. . thermicons
. thermionic diodes
. . cesium diodes
. vacuum tubes
. . cathode ray tubes
. . . monoscopes
. . . picture tubes
. . cesium diodes
. . microwave tubes
. . . cetascopes
. . . cyclotron resonance devices
. . . klystrons
. . . magnetrons
. . . . registrons
. . . planotrons
. . . traveling wave tubes
. . . . backward wave tubes
. . . . helitrons
. . . . cercotrons
. . vacuum tube oscillators
RT cavity resonators
circuits
crossed field amplifiers
diodes
fiber optics
∞ heaters
modulators
orbitrons
oscillators
pentodes
rectifiers
resonators
servotes
transconductance
triodes
tube grids
∞ tubes
tunnel cathodes
velocity modulation
x-ray tubes

electron tunneling
UF tunnel resistors
RT energy levels
MIM diodes
quantum dots
resonant tunneling
scanning tunneling microscopy
semiconductors (materials)
superconductivity
tunnel diodes
tunnel junctions
∞ tunneling

electron-hole drops
DEF Exciton condensations, exhibiting the properties of electrically conducting plasmas, which form in germanium and silicon crystals at sufficiently low cryogenic temperatures.
RT carrier density (solid state)
luminescence
magnetic fields
optical pumping
phase transformations
plasma density
plasma equilibrium
semiconductor plasmas
single event upsets

electron-ion recombination
GS recombination reactions
. electron-ion recombination
. . radiative recombination
RT ion recombination
plasma control

electron-positron annihilation
USE positron annihilation

electron-positron pairs
(added September 1988)
GS particles
. elementary particles
. . electron-positron pairs
RT annihilation reactions
charged particles
electron-positron plasmas
electrons
pair production
positron annihilation
positrons

electron-positron plasmas
(added September 1988)
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . electron-positron plasmas
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . electron-positron plasmas
RT electron plasma
electron-positron pairs
electrons
positrons
relativistic plasmas

electronarcosis
RT electroanesthesia
electrophysiology

electronic aircraft
DEF Designation for tactical electronic warfare aircraft.
RT∞ aircraft
automatic control
electronic countermeasures

electronic amplifiers
USE amplifiers

electronic bulletin boards
(added September 1993)
UF computer bulletin boards
RT communication networks
computer conferencing
electronic mail
Internet resources
Internets
World Wide Web

electronic control
RT automatic control
cascade control
∞ control
control equipment
control systems design
controllers
current regulators
electric control
electric switches
feedback control
hydraulic control
optical control
pneumatic control
remote control
Terminal Configured Vehicle Program
voltage regulators

electronic countermeasures
GS countermeasures
. electronic countermeasures
. . antiradar coatings
. . chaff
RT deception
electromagnetic compatibility
electromagnetic interference
electronic aircraft
electronic warfare
jamming
optical countermeasures
radar detection
radio frequency interference

electronic equipment
DEF Equipment in which electricity is conducted principally by electrons moving through a vacuum, gas, or semiconductor.
GS electronic equipment
. diodes
. . crystal rectifiers
. . plasma diodes
. . semiconductor diodes
. . . avalanche diodes
. . . . crystal
. . . Backi diodes
. . . germanium diodes
. . . Gunn diodes
. . . . transferred electron devices
. . . junction diodes
. . . . MIM diodes
. . . . step recovery diodes
. . . light emitting diodes
. . . parametric diodes
. . . photodiodes
. . . Schottky diodes
. . . tunnel diodes
. . . varactor diodes
. . thermionic diodes
. . . cesium diodes
. electronic filters
. electronic modules
. . microcircuits
. electronic packaging
. electronic recording systems
. electronic transducers
. miniature electronic equipment
. solid state devices
. . crystrons
. . crystal rectifiers
. . metal-nitride-oxide-semiconductors
. . multispectral linear arrays
. . semiconductor devices
. . . avalanche diodes
. . . . crystal
. . . Backi diodes
. . . charge transfer devices
. . . . bucket brigade devices

. . . . charge coupled devices
. . . . charge injection devices
. . . gunn diodes
. . . heterojunction devices
. . . . high electron mobility transistors
. . . . . MODFETS
. . . junction diodes
. . . . MIM diodes
. . . . step recovery diodes
. . . light emitting diodes
. . . metal oxide semiconductors
. . . . CMOS
. . . . ITO (semiconductors)
. . . . SOS (semiconductors)
. . . MIM (semiconductors)
. . . MIS (semiconductors)
. . . MOM (semiconductors)
. . . MSM (semiconductors)
. . . NDM semiconductor devices
. . . neutrons
. . . parametric diodes
. . . photodiodes
. . . photovoltaic cells
. . . . solar cells
. . . . . vertical junction solar cells
. . . Schottky diodes
. . . semiconductor lasers
. . . . aluminum gallium arsenide lasers
. . . . gallium arsenide lasers
. . . . quantum well lasers
. . . . YLF lasers
. . . SOI (semiconductors)
. . . thermistors
. . . thyristors
. . . . silicon controlled rectifiers
. . . transferred electron devices
. . . transistor amplifiers
. . . transistors
. . . . bipolar transistors
. . . . field effect transistors
. . . . . charge flow devices
. . . . . JFET
. . . . . MODFETS
. . . . . high electron mobility transistors
. . . . . MODFETS
. . . . junction transistors
. . . . . JFET
. . . . photoresistors
. . . . silicon transistors
. . . . . SOS (semiconductors)
. . . TRAPATT devices
. . . varactor diodes
. . . varistors
. . SIS (semiconductors)
. . SIS (superconductors)
. . solid state lasers
. . . aluminum gallium arsenide lasers
. . . DSR lasers
. . . fiber lasers
. . . gallium arsenide lasers
. . . quantum well lasers
. . . ruby lasers
. . . YAG lasers
. . . YLF lasers
. . spacecraft electronic equipment
RT antenna components
bubble technique
= electric equipment
= electronics
= equipment
radiation hardening
spherical antennas
system generated electromagnetic pulses

electronic equipment tests
SN (CHECKOUT OF ELECTRONIC EQUIPMENT)
RT Earth terminal measurement system
electric equipment tests
electrical measurement
environmental tests
fault detection
nondestructive tests
oscilloscopes
quality control
resonance testing
salt tests
stability tests
= test equipment
= tests
vibration tests

electronic filters
GS electronic equipment
. electronic filters
RT electric filters
= filters
FIR filters

electronic knob
USE electron energy
energy levels

electronic mail
GS telecommunication
. electronic mail
RT communication networks
communication satellites
computer conferencing
computer networks
data transmission
electronic bulletin boards
electronic publishing
internet resources
Internets

electronic modules
GS electronic equipment
. electronic modules
. . microcircuits
modules
. electronic modules
. . microcircuits
RT hardware
miniature electronic equipment
modularity
subminiaturization

electronic packaging
GS electronic equipment
. electronic packaging
packaging
. electronic packaging
RT circuit boards
DTL integrated circuits
encapsulating
hybrid circuits
integrated circuits
large scale integration
linear integrated circuits
medium scale integration
microcircuits
printed circuits
thick films
TTL integrated circuits

electronic photography
USE electro-optical photography

electronic publishing
(added July 1985)
RT computer conferencing
document markup languages
documents
electronic mail
hypertext
information dissemination
multimedia
printing

electronic recording systems
GS electronic equipment
. electronic recording systems
RT recording instruments
= systems
tape recorders

electronic signal measurement
USE signal measurement

electronic spectra
SN (EMISSION OR ABSORPTION MOLECULAR SPECTRA OF AN ELECTRON TRANSITION)
GS spectra
. energy spectra
. . electronic spectra
. molecular spectra
. . electronic spectra
. radiation spectra
. . electromagnetic spectra
. . . line spectra
. . . electronic spectra
RT absorption spectra
emission spectra
Lyman spectra
spectral bands
vibrational spectra

electronic structure
USE atomic structure

electronic switches
USE switching circuits

electronic transducers
GS electronic equipment
. electronic transducers
transducers
. electronic transducers
RT magnetic transducers
= sensors
ultrasonic wave transducers

electronic warfare
DEF Military action involving the use of electromagnetic energy to determine, exploit, reduce, or prevent hostile use of the electromagnetic spectrum, and action which retains friendly use of the electromagnetic spectrum.
GS military operations
. electronic warfare
warfare
. electronic warfare
RT air defense
antiradar coatings
chaff
combat
deception
electromagnetic compatibility
electromagnetic interference
electromagnetic spectra
electronic countermeasures
evasive actions
jamming
missile detection
peacetime
radar detection
radio frequency interference
strategy

= electronics.
SN: (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF: That branch of physics that treats of the emission, transmission, behavior, and effects of electrons. Used for photoelectronics.
UF: photoelectronics
RT: astronics
avionics
Digital electronics
electrical engineering
electricity
electronic equipment
electrophysics
medical electronics
microelectronics
molecular electronics
nucleonics
quantum electronics
radio electronics
thermionics
transistor circuits
volt-ampere characteristics

electronagography.
RT: electrophysiology
printing

electrons.
DEF: Particles of very small mass, carrying a unit negative or positive charge. Negative electrons, surrounding the nucleus (i.e., orbital electrons) are present in all atoms. Their number is equal to the number of positive charges (or protons) in the particular nucleus. The term electron, when used alone, commonly refers to a negative electron. A positive electron is usually called a positron, and a negative electron is sometimes called a negatron.
UF: electron flux
nonrelativistic electrons
GS: particles
. charged particles
. . energetic particles
. . . electrons
. . . . conduction electrons
. . . . free electrons
. . . . high energy electrons
. . . . . relativistic electron beams
. . . . hot electrons
. . . . N electrons
. . . . negatrons
. . . . photoelectrons
. . . . pi-electrons
. . . . polarons
. . . . solar electrons
. . corpuscular radiation
. . energetic particles
. . . electrons
. . . . conduction electrons
. . . . free electrons
. . . . high energy electrons
. . . . . relativistic electron beams
. . . . hot electrons
. . . . N electrons
. . . . negatrons
. . . . photoelectrons
. . . . pi-electrons
. . . . polarons
. . . . solar electrons
. elementary particles
. . fermions
. . . leptons
. . . . electrons
. . . . . conduction electrons
. . . . . free electrons
. . . . . high energy electrons
. . . . . relativistic electron beams
. . . . . hot electrons
. . . . . N electrons
. . . . . negatrons
. . . . . photoelectrons
. . . . . pi-electrons
. . . . . polarons
. . . . . solar electrons
RT: acceptor materials
beta particles
Bohr magneton
cosmic rays
donor materials
electron acceleration
electron mass
electron-positron pairs
electron-positron plasmas
excitons
holes (electron deficiences)
Lewis base
majority carriers
= materials
minority carriers
muonium
n-type semiconductors
nuclear radiation
Pomeranchuk theorem
quantum numbers
radiation belts
semiconductors (materials)
Suhl effect

electronystagmography.
GS: bioengineering
. biometrics
. . electronystagmography
physiological tests
. electronystagmography
RT: eye examinations
eye movements
nystagmus
ophthalmology

electrophoresis.
DEF: The movement of colloidal particles produced by the application of an electric potential. Used for continuous flow electrophoresis.
UF: continuous flow electrophoresis
RT: bioprocessing
colloids
electrodeposition
electroplating
= microgravity applications
particle motion

electrophotometers.
UF: photoelectric photometers
GS: measuring instruments
. optical measuring instruments
. . photometers
. . . electrophotometers
. radiation measuring instruments
. . photometers
. . . electrophotometers
optical equipment
. optical measuring instruments
. . photometers
. . . electrophotometers
RT: electrophotometry

electrophotometry.
GS: chemical tests
. chemical analysis
. . electrophotometry
optical measurement
. photometry
. . electrophotometry
RT: colorimetry
electrophotometers
electrophysics
= materials tests
microanalysis
photometers
pools
qualitative analysis
quantitative analysis
spectroscopic analysis
spectroscopy

electrophysics.
GS: electrophysics
. electro-optics
. molecular electronics
RT: electrochemistry
electrokinetics
electromagnetism
= electronics
electropneumatics
= physics
= science
theoretical physics

electrophysiology.
GS: physiology
. electrophysiology
RT: body measurement (biology)
depolarization
echoencephalography
electrocardiography
electroencephalography
electromyography
electronarcosis
electronystagmography
electroretinography
His bundle
information processing (biology)
nervous system
neurology
= science

electroplating.
GS: coating
. electroplating
coatings
. electroplating
deposition
. electrodeposition
. . electroplating
plating
. electroplating
RT: baths
cathodic coatings
current density
electrodes
electroforming
electrolysis
electrolytes
electrolytic cells
electrophoresis
metallizing
nickel plate
protective coatings
surface finishing

electroplethysmography.
GS: bioengineering
. biometrics
. . body measurement (biology)
. . . electroplethysmography
. . plethysmography
. . . electroplethysmography
RT: blood circulation

electrophysiology
medical electronics

electropolishing
DEF The improvement in surface finish of a metal effected by making it anodic in an appropriate solution. Used for electrolytic polishing.
UF *electrolytic polishing*
GS metal finishing
. **electropolishing**
polishing
. metal polishing
. . **electropolishing**
RT electrochemical machining
metallography
surface finishing

electrorefining
GS refining
. **electrorefining**
RT electrodes
electrolytes
electrolytic cells
electrowinning

electroretinography
GS bioengineering
. biometrics
. . **electroretinography**
RT electrophysiology
medical electronics
retina

electrorheological fluids
(added June 1990)
UF *ER fluids*
RT elastodynamics
rheology

electroseismic effect
USE **electric current**
seismic waves

∞ **electroslag process**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT electroslag refining
electroslag welding

electroslag refining
GS refining
. **electroslag refining**
RT arc melting
∞ electroslag process
resistance heating

electroslag welding
GS welding
. fusion welding
. . electric welding
. . . **electroslag welding**
RT ∞ electroslag process

electrostatic bonding
DEF Use of the particle-attracting property of electrostatic charges to bond particles of one charge to those of the opposite charge.
RT binding energy
coverings
encapsulating
energy technology
glass
solar arrays
solar cells

electrostatic charge
GS electric charge
. **electrostatic charge**
RT capacitance
charge distribution
∞ charging
electric discharges
electric fields
electrostatics
SCATHA satellite
static electricity
xerography

electrostatic drag
GS dynamic characteristics
. drag
. . **electrostatic drag**
RT drag measurement
satellite drag

electrostatic engines
GS engines
. rocket engines
. . electric rocket engines
. . . **electrostatic engines**
RT arc jet engines
cesium engines
ion engines
mercury ion engines
microrocket engines
restartable rocket engines
RIT engines
sustainer rocket engines
Vernier engines

electrostatic erosion
USE **spark machining**

electrostatic fields
USE **electric fields**

electrostatic generators
GS electric generators
. direct power generators
. . **electrostatic generators**
RT arc generators
∞ generators
klystrons
magnetrons
rotating generators
voltage generators

electrostatic gyroscopes
UF *electrically suspended gyroscopes*
ESG (gyroscopes)
GS gyroscopes
. **electrostatic gyroscopes**
RT levitation

electrostatic plasma
USE **plasmas (physics)**

electrostatic precipitators
GS separators
. precipitators
. . **electrostatic precipitators**
RT adsorption
air purification
air sampling
dust collectors
fly ash
∞ separation

electrostatic probes
UF *Langmuir probes*
GS measuring instruments
. plasma probes
. . **electrostatic probes**
. radiation measuring instruments
. . **electrostatic probes**
RT electron energy
plasma frequencies
radiation counters
SCATHA satellite

electrostatic propulsion
GS propulsion
. electric propulsion
. . **electrostatic propulsion**
. . . ion propulsion
. low thrust propulsion
. . **electrostatic propulsion**
. . . ion propulsion
. spacecraft propulsion
. . **electrostatic propulsion**
. . . ion propulsion
RT electromagnetic propulsion
plasma propulsion

electrostatic shielding
GS shielding
. **electrostatic shielding**
RT electric conductors
SCATHA satellite

electrostatic waves
GS elastic waves
. magnetohydrodynamic waves
. . plasma waves
. . . **electrostatic waves**
RT diffusion waves
ionic waves
longitudinal waves
magnetoelastic waves
shock waves
wave-particle interactions

electrostatics
GS statics
. **electrostatics**
RT Born-Infeld theory
electric fields
electromagnetic interactions
electromechanics
electrostatic charge
magnetostatics
Poisson equation
static electricity

electrostriction
DEF The phenomenon wherein some dielectric materials experience an elastic strain when subjected to an electric field, this strain being independent of polarity of the field.
GS electrical properties
. **electrostriction**
mechanical properties
. **electrostriction**
RT magnetostriction
piezoelectricity

electrothermal engines
GS engines
. rocket engines
. . electric rocket engines
. . . **electrothermal engines**
. . . . arc jet engines
. . . . plasma engines
. . . . . two stage plasma engines
. . . . resistojet engines
RT high temperature propellants
ion engines
nuclear electric propulsion
pulsed jet engines
restartable rocket engines
sustainer rocket engines

electroweak interactions (field theory)
(added April 1994)
GS particle interactions
. elementary particle interactions
. . **electroweak interactions (field theory)**
RT electromagnetic interactions
electroweak model
∞ interactions
standard model (particle physics)
weak interactions (field theory)

electroweak model
(added April 1994)
UF *standard electroweak model*
Weinberg-Salam Gauge Model
GS field theory (physics)
. gauge theory
. . unified field theory
. . . **electroweak model**
models
. **electroweak model**
RT electromagnetic interactions
electroweak interactions (field theory)
Higgs bosons
particle theory
quantum theory
standard model (particle physics)
weak interactions (field theory)

electrowinning
DEF The production of metals by electrolysis with insoluble anodes in solutions derived from ores or other materials.
RT electrodeposition
electrodes
electrolytes
electrolytic cells
electrorefining

Elektron 1 satellite
GS artificial satellites
. meteorological satellites
. . Elektron satellites
. . . **Elektron 1 satellite**

Elektron 2 satellite
GS artificial satellites
. meteorological satellites
. . Elektron satellites
. . . **Elektron 2 satellite**

Elektron 4 satellite
GS artificial satellites
. meteorological satellites
. . Elektron satellites
. . . **Elektron 4 satellite**

Elektron satellites
GS artificial satellites
. meteorological satellites
. . **Elektron satellites**
. . . Elektron 1 satellite
. . . Elektron 2 satellite
. . . Elektron 4 satellite

element abundance
USE **abundance**

elementary excitations
UF quasi-particles
GS **elementary excitations**
. excitons
. magnons
. phonons
. . phonon beams
. plasmons
. polarons
RT many body problem

elementary particle interactions
GS particle interactions
. **elementary particle interactions**
. . electroweak interactions (field theory)
. . high energy interactions
. . strong interactions (field theory)
. . meson-muson interactions
. . meson-nucleon interactions
. . nuclear capture
. . . electron capture
. . nucleon-nucleon interactions
. . weak energy interactions
. . . weak interactions (field theory)
RT angular distribution
electromagnetic interactions
∞ interactions
ion atom interactions
Mandelstam representation
particle decay
photon-electron interaction
Veneziano model

elementary particles
GS particles
. **elementary particles**
. . antiparticles
. . . antineutrinos
. . . antinucleons
. . . antiprotons
. . . positrons
. . beta particles
. . bosons
. . . alpha particles
. . . Higgs bosons
. . . mesons
. . . . eta-mesons
. . . . hyperons
. . . . . xi hyperons
. . . . kaons
. . . . meson resonance
. . . . . X mesons
. . . . muons
. . . . omega-mesons
. . . . pions
. . . . vector mesons
. . . . . rho-mesons
. . . . . sigma-mesons
. . . photons
. . . xi hyperons
. . deuterons
. . electron-positron pairs
. . fermions
. . . baryons
. . . . hyperons
. . . . . xi hyperons
. . . . omega-mesons
. . . . rho-mesons
. . . . sigma-mesons
. . . eta-mesons
. . . leptons
. . . . antineutrinos
. . . . electrons
. . . . . conduction electrons
. . . . . free electrons
. . . . . high energy electrons
. . . . . relativistic electron beams
. . . . . hot electrons
. . . . . N electrons
. . . . . negatrons
. . . . . photoelectrons
. . . . . pi-electrons
. . . . . polarons
. . . . . solar electrons
. . . . muons
. . . . neutrinos
. . . . . solar neutrinos
. . . . positrons
. . . meson resonance
. . . . X mesons
. . . neutrons
. . . . cold neutrons
. . . . fast neutrons
. . . . photoneutrons
. . . . solar neutrons
. . . . thermal neutrons
. . . protons
. . . . recoil protons
. . . . solar protons
. . gluons
. . gravitinos
. . gravitons
. . hadrons
. . . baryons
. . . . hyperons
. . . . . xi hyperons
. . . . omega-mesons
. . . . rho-mesons
. . . . sigma-mesons
. . . mesons
. . . . eta-mesons
. . . . hyperons
. . . . . xi hyperons
. . . . kaons
. . . . meson resonance
. . . . . X mesons
. . . . muons
. . . . omega-mesons
. . . . pions
. . . . vector mesons
. . . . . rho-mesons
. . . . . sigma-mesons
. . magnetic monopoles
. . nucleons
. . partons
. . quarks
. . tachyons
RT atomic structure
bubble chambers
charged particles
de Broglie wavelengths
geocyclotrons
hypernuclei
instantons
ionizing radiation
neutron scattering
nuclear interactions
nuclear particles
nuclear radiation
nuclei (nuclear physics)
particle accelerators
Pomeranchuk theorem
positron annihilation
quantum theory
radiation belts
standard model (particle physics)

∞ elements
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT atoms
chemical elements
hahnium
heavy elements
isoparametric finite elements
light elements
logical elements
neutral atoms
nuclear fuel elements
orbital elements
rutherfordium
tasks

elevation
RT altimetry
altitude
contours
head (fluid mechanics)
hydrostatic pressure
hydrostatics
hypsography
low altitude
pressure heads
topography

elevation angle
UF elevocentor
GS geometry
. Euclidean geometry
. . angles (geometry)
. . . elevation angle
RT altitude
azimuth
datum (elevation)
field of view
look angles (tracking)
topography

elevations (drawings)
USE drawings

elevator illusion
GS psychological effects
. illusions
. . optical illusion
. . . elevator illusion
RT visual perception

elevators (control surfaces)
GS airfoils
. elevators (control surfaces)
control surfaces
. elevators (control surfaces)
RT ailerons
∞ control
elevons
horizontal tail surfaces
hydrofoils
stabilizers (fluid dynamics)
∞ surfaces
tabs (control surfaces)
tail assemblies
tail surfaces

elevators (lifts)
RT conveyors
escalators
∞ jacks
∞ lifts
winches

elevons
GS airfoils
. elevons
control surfaces
. elevons
RT ailerons
elevators (control surfaces)
lateral control
tabs (control surfaces)

elimination
GS elimination
. deletion
RT attenuation
cancellation
decontamination
depletion
∞ discharge
disposal
evacuating (transportation)
evacuating (vacuum)
exclusion
exhaust systems
exhausting
Gaussian elimination
pollution
purification
∞ reduction
rejection
∞ separation
stopping
waste disposal

ellipses
DEF Plane curves constituting the locus of all points the sum of whose distances from two fixed points called focuses or foci is constant; an elongated circle.
GS geometry
. Euclidean geometry
. . analytic geometry
. . . conics
. . . . ellipses
RT circles (geometry)

ellipsoids
DEF Surfaces whose plane sections (cross sections) are all ellipses or circles, or the solid enclosed by such a surface. Used for Izsak ellipsoid.
UF *Izsak ellipsoid*
GS symmetrical bodies
. ellipsoids
RT bodies of revolution
ellipticity
ogives

ellipsometers
DEF Instruments for determining the ellipticity of polarized light. Used to measure the thickness of very thin transparent films.
GS measuring instruments
. optical measuring instruments
. . ellipsometers
optical equipment
. optical measuring instruments
. . ellipsometers
RT ellipsometry
photometers
polarimeters

ellipsometry
(added December 1988)
RT dimensional measurement
ellipsometers
ellipticity
film thickness
∞ measurement
optical measurement
polarized light

elliptic differential equations
GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . elliptic differential equations
. . . . . Monge-Ampere equation
RT ∞ equations
half spaces
maximum principle

elliptic functions
UF elliptic integrals
GS analysis (mathematics)
. complex variables
. . meromorphic functions
. . . elliptic functions
functions (mathematics)
. meromorphic functions
. . elliptic functions
RT Jacobi integral
Weierstrass functions

elliptic integrals
USE elliptic functions

elliptical cylinders
RT circular cylinders
∞ cylinders
cylindrical bodies
cylindrical shells

elliptical galaxies
GS celestial bodies
. galaxies
. . elliptical galaxies
RT disk galaxies
galactic clusters
local group (astronomy)
peculiar galaxies
ring galaxies
shell galaxies
spiral galaxies
star clusters
Virgo galactic cluster

elliptical orbits
UF *Hohmann trajectories*
Hohmann transfer orbits
GS orbits
. elliptical orbits
. . transfer orbits
. . . interplanetary transfer orbits
RT aphelions
apogees
apsides
circular orbits
Earth orbits
Earth-Mars trajectories
Earth-Mercury trajectories
eccentric orbits
ellipticity
equatorial orbits
Euler-Lambert equation
low earth orbits
lunar orbits
orbital mechanics
PAS
perigees
perihelions
planetary orbits
polar orbits
satellite orbits
solar orbits
spacecraft orbits

elliptical plasmas
DEF Confined non-circular plasmas.
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . elliptical plasmas
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . elliptical plasmas
RT magnetohydrodynamic stability
plasma control
toroidal plasmas

elliptical polarization
DEF The polarization of a wave radiated by an electric vector rotating in a plane and

simultaneously varying in amplitude so as to describe an ellipse.
GS polarization (waves)
. elliptical polarization
RT circular polarization
magnetobionics

ellipticity
DEF The amount by which a spheroid differs from a circle, calculated by dividing the difference in the length of the axes by the length of the major axis.
GS shapes
. ellipticity
RT eccentricity
ellipsoids
ellipsometry
elliptical orbits
flattening
oblate spheroids

elongation
RT angles (geometry)
deformation
ductility
eccentricity
expansion
mechanical properties
plastic deformation
stretching
superplasticity
tensile deformation
tensile strength

elution
UF elutriation
RT adsorption
extraction
flushing
leaching
purification
∞ separation
washing

elutriation
USE elution

emanation
USE emission

embedded computer systems
DEF Computer systems physically incorporated into larger systems whose primary function is not data processing.
GS data processing equipment
. computers
. . embedded computer systems
. . . airborne/spaceborne computers
RT Ada (programming language)

embedding
RT acceleration protection
encapsulating
insertion

embolisms
DEF Large amounts of air in the blood stream which, when reaching the heart, cause it to fail; small amounts are resorbed and cause no symptoms.
GS embolisms
. aeroembolism
. fat embolisms
RT blood vessels
clothing
coagulation
infarction

embossing
DEF Raising in relief on a surface.
RT braille

embrittlement
DEF The severe loss of ductility or toughness or both, of a material, usually a metal or alloy.
GS embrittlement
. hydrogen embrittlement
NT brittle materials
brittleness
degradation
time temperature parameter

embryology
RT ∞ biology
diencephalon
differentiation (biology)
embryos
fetuses
neuroblasts
reproduction (biology)

embryos
RT eggs
embryology
fetuses
seeds

emerald
USE beryl

emergencies
RT accidents
disasters
fail-safe systems

emergency breathing techniques
RT ∞ breathing
∞ methodology
pressure breathing
respirators
resuscitation

emergency life sustaining systems
GS support systems
. life support systems
. . emergency life sustaining systems
. . . AEPS
RT Assured Crew Return Vehicle
environmental control
escape capsules
flasks
high altitude breathing
medical equipment
oxygen supply equipment
portable life support systems
pressurized cabins
protective clothing
safety
safety devices
survival equipment
∞ systems

emergency locator transmitters
DEF Aircraft distress signal equipment with a radio beacon on a specific emergency frequency and used for locating downed aircraft. The set is activated by the impact of the crash.
GS transmitters
. emergency locator transmitters

emerging
RT emission
emissivity
emittance

emission
UF emanation
GS emission
. acoustic emission
. exhaust emission
. light emission
. . incandescence
. . luminescence
. . . bioluminescence
. . . cathode glow
. . . cathodoluminescence
. . . chemiluminescence
. . . electroluminescence
. . . fluorescence
. . . . laser induced fluorescence
. . . . phosphorescence
. . . . resonance fluorescence
. . . . x ray fluorescence
. . . lunar Luminescence
. . . optical resonance
. . . photoluminescence
. . . . triboluminescence
. . . . x ray fluorescence
. . . shock wave luminescence
. . . sonoluminescence
. . . spacecraft glow
. . . thermoluminescence
. microwave emission
. particle emission
. . electron emission
. . . field emission
. . . photoelectric emission
. . . secondary emission
. . ion emission
. . neutron emission
. . thermionic emission
. photoionization
. radio emission
. . CN emission
. . hydroxyl emission
. . radio bursts
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. . solar radio emission
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. self sustained emission
. spectral emission
. spontaneous emission
. stimulated emission
. thermal emission
. . thermionic emission
. ultraviolet emission
. water masers
RT airglow
atomic recombination
bursts
decay
∞ discharge
efflux
ejection
emerging
emitters
excitation
ionizing radiation
irradiation
nuclear reactions
pair production
quantum theory
∞ radiation

radioactive decay
radioactivity
relaxing
selection rules (nuclear physics)
sputtering

emission spectra
SN (LIMITED TO ELECTROMAGNETIC RADIATION OF ANY WAVELENGTH EMITTED FROM EXCITED MATTER—EXCLUDES PARTICLE SPECTRA)
DEF The spectra of wavelengths and relative intensities of electromagnetic radiation emitted by a given radiator. Each radiating substance has a unique, characteristic emission spectrum, just as every medium of transmission has its individual absorption spectrum.
GS spectra
. radiation spectra
. . emission spectra
RT absorption spectra
atomic recombination
Balmer series
continuous radiation
D lines
electromagnetic spectra
electron spectroscopy
electronic spectra
flame spectroscopy
gamma ray spectra
gamma rays
H alpha line
H beta line
H gamma line
H II regions
H lines
hydroxyl emission
infrared spectra
K lines
line spectra
Lyman spectra
molecular spectra
molecular spectroscopy
nuclear radiation
optical emission spectroscopy
optical transition
Paschen series
photoluminescent bands
plasma spectra
Raman spectra
Rydberg series
Schumann-Runge bands
solar spectra
solar spectrometers
spectral signatures
spectrum analysis
spontaneous emission
stellar spectra
Swan bands
symbiotic stars
ultraviolet emission
ultraviolet spectra
Vegard-Kaplan bands
visible spectrum
x ray stars
x rays

emissivity
DEF A property of a material, measured as the emittance of a specimen of the material that is thick enough to be completely opaque and has an optically smooth surface. Used for photoemissivity
UF photoemissivity
GS thermodynamic properties
. thermophysical properties
. . emissivity
RT black body radiation
brightness
emerging
emittance
holmiums
incandescence
luminosity
nongray atmospheres
nongray gas
optical measurement
radiance
radiant flux density
Stefan-Boltzmann law
surface properties
temperature
thermal emission

emissographs
USE actinometers
recording instruments

emittance
RT emerging
emissivity
flux (rate)
luminosity
luminous intensity
optical properties
radiance
radiant flux density
spectral emission
thermodynamic properties

emitters
GS emitters
. thermionic cathodes
. thermionic emitters
RT electron emission
emission
semiconductors (materials)
thermophotovoltaic conversion

emotional factors
RT engine pectoris
detachment
disorders
ethers
feedback
frustration
human reactions
moods
panic
phobias
psychological factors
psychology
sensory feedback
sensory stimulation

emotions
RT+ depression
fear
fear of flying
frustration
human behavior
laughing
moods
panic
psychological effects
psychology
sensory feedback

EMP (electromagnetism)
USE electromagnetic pulses

empennage
USE tail assemblies

emphysema
GS diseases
. respiratory diseases
. . emphysema
RT occupational diseases

employee relations
RT+ corporation
human relations
personnel
personnel development
personnel management
position (title)
production management
retirement
wage surveys

employment
RT personnel selection
+ tests

emptying
RT disposal
dumping
ejection
expulsion
expulsion bladders
jettisoning
materials handling
releasing
removal
spilling
spreading
unloading

EMR 6850 computer
GS data processing equipment
. computers
. . digital computers
. . . EMR 6850 computer

emulsions
DEF Suspensions of fine particle or globules of one or more liquids in another liquid.
GS mixtures
. dispersions
. . emulsions
. . . photographic emulsions
. . . . nuclear emulsions
RT Brownian movements
colloids
slurries
solutions

enamels
DEF Thin ceramic coatings, usually of high glass content, applied to a substrate, generally a metal.
GS coatings
. enamels
finishes
. enamels
RT porcelain

encapsulated microcircuits
DEF Microelectronic circuits enclosed in plastic.
GS circuits
. integrated circuits
. . encapsulated microcircuits
RT microelectronics

encapsulating
GS coating
. encapsulating
coatings
. encapsulating
RT canning
electronic packaging

electrostatic bonding
embedding
∞ imbeddings
materials handling
packaging
plastic coatings
potting compounds
protective coatings
sealing
sheaths

Enceladus
DEF A satellite of Saturn orbiting at a mean distance of 238,000 kilometers.
GS celestial bodies
. natural satellites
. . icy satellites
. . . Enceladus
. . Saturn satellites
. . . Enceladus
RT Saturn (planet)

encephalitis
GS diseases
. encephalitis
RT bacterial diseases
brain
viral diseases

Encke comet
DEF A very faint comet with a periodicity of 3.3 years which is the shortest of any known comet.
GS celestial bodies
. comets
. . Encke comet

Encke method
RT∞ methodology

enclosure
RT∞ casing
housings
packaging

enclosures
RT air locks
asteroid capture
∞ barriers
biopaks
closures
compartments
∞ containers
coverings
doghouses (electronics)
∞ envelopes
housings
∞ pens
perforated sheets
pressure chambers
protectors
rooms
safety devices
shells (structural forms)
shielding
shipyards
walls

encoders
USE coders

encoding
USE coding

encounters
RT crashes
docketing

end effectors
UF fingers (robotics)
hands (robotics)
mechanical fingers
mechanical hands
robot fingers
robot hands
RT∞ effectors
manipulators
robot arms
robot dynamics
robotics
robots
tactile sensors (robotics)
torque sensors (robotics)

end moraines
USE glacial drift

end plates
GS structural members
. plates (structural members)
. . end plates
RT anisotropic plates
bulkheads
circular plates
closures
flat plates
shallow shell equations

end-to-end data systems
DEF Comprehensive data systems which demonstrate the processing of sensor data to the user thus reducing data fragmentation.
GS end-to-end data systems
. needs (data system)
RT∞ data
data acquisition
data processing
data systems
∞ systems

endangered species
DEF Living organisms (except plants) whose populations have diminished to such low levels that survival may require extraordinary conservation procedures. Changes in size and quality of the ecology are considered the cause of the possible extinction of some species.
RT animals
birds
ecology
ecosystems
habitats
pollution
toxicity
wildlife

Endeavour (orbiter)
(added June 1989)
UF Space Shuttle Orbiter 105
GS manned spacecraft
. space shuttles
. . Space Shuttle orbiters
. . . Endeavour (orbiter)
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . space shuttles
. . . . Space Shuttle orbiters
. . . . . Endeavour (orbiter)
RT Challenger (Orbiter)
∞ spacecraft

endfire arrays
GS arrays
. antenna arrays
. . linear arrays
. . . endfire arrays
. . . Yagi antennas
RT backfire antennas
directional antennas

endocrine glands
GS anatomy
. glands (anatomy)
. . endocrine glands
. . . adrenal gland
. . . gonads
. . . . ovaries
. . . . testes
. . . hypothalamus
. . . pancreas
. . . parathyroid gland
. . . pineal gland
. . . pituitary gland
. . . thymus gland
. . . thyroid gland
RT endocrinology
estrogens

endocrine secretions
GS secretions
. endocrine secretions
. . hormones
. . . corticosteroids
. . . . aldosterone
. . . . hydrocorticosteroid
. . . . . cortisone
. . . estrogens
. . . hyperlensin
. . . pituitary hormones
. . . . adrenocorticotropin (ACTH)
. . . prostaglandins
. . . thyroxine
. . insulin

endocrine systems
RT endocrinology
glands (anatomy)
hormones
mineral metabolism
∞ systems

endocrinology
GS medical science
. endocrinology
RT endocrine glands
endocrine systems

endolymph
GS body fluids
. endolymph
RT ear

endoplasmic reticulum
GS organelles
. endoplasmic reticulum
. . sarcoplasmic reticulum
RT cells (biology)
cytoplasm

endoscopes
UF fiberscopes
GS medical equipment
. endoscopes
optical equipment
. endoscopes
RT inspection

endothelium
GS tissues (biology)
. endothelium
RT blood vessels
cells (biology)

endothermic fuels
GS fuels
. chemical fuels
. . endothermic fuels
RT cryogenic rocket propellants
double base propellants
gaseous rocket propellants
hydrocarbon fuels
propellant decomposition

endothermic reactions
GS chemical reactions
. endothermic reactions
RT association reactions
exothermic reactions
heat sinks
pyrolysis
thermal decomposition

endotoxins
GS poisons
. endotoxins
toxins and antitoxins
. endotoxins
RT bacteriology
toxicology

endrin
GS epoxy compounds
. endrin
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . endrin
RT insecticides

-- endurance
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT durability
fatigue (materials)

enemy personnel
GS personnel
. enemy personnel
RT armed forces (foreign)

Energetic Particle Explorer A
USE Explorer 12 satellite

Energetic Particle Explorer B
USE Explorer 14 satellite

Energetic Particle Explorer C
USE Explorer 18 satellite

Energetic Particle Explorer D
USE Explorer 35 satellite

energetic particles
DEF Charged particles having energies equaling or exceeding a hundred MeV
GS particles
. charged particles
. . energetic particles
. . . electrons
. . . . conduction electrons
. . . . free electrons
. . . . high energy electrons
. . . . . relativistic electron beams
. . . . hot electrons
. . . . N electrons
. . . . negatrons
. . . . photoelectrons
. . . . pi-electrons
. . . . polarons
. . . . solar electrons
. . . nuclei (nuclear physics)
. . . . alpha particles
. . . . deuterons
. . . . even-even nuclei
. . . . heavy nuclei
. . . . hypernuclei
. . . . odd-even nuclei
. . . . odd-odd nuclei
. . . . tritons
. . . plasmas (physics)
. . . . argon plasma
. . . . beta particles
. . . . boundary layer plasmas
. . . . cold plasmas
. . . . collisional plasmas
. . . . . strongly coupled plasmas
. . . . collisionless plasmas
. . . . cosmic plasma
. . . . cylindrical plasmas
. . . . dense plasmas
. . . . . plasma focus
. . . . . strongly coupled plasmas
. . . . electron plasma
. . . . electron-positron plasmas
. . . . elliptical plasmas
. . . . helium plasma
. . . . high temperature plasmas
. . . . hydrogen plasma
. . . . . deuterium plasma
. . . . laser plasmas
. . . . metallic plasmas
. . . . . cesium plasma
. . . . . uranium plasma
. . . . microplasmas
. . . . nitrogen plasma
. . . . nonequilibrium plasmas
. . . . nonuniform plasmas
. . . . oxygen plasma
. . . . rarefied plasmas
. . . . relativistic plasmas
. . . . rotating plasmas
. . . . semiconductor plasmas
. . . . space plasmas
. . . . . solar wind
. . . . . stellar winds
. . . . spherical plasmas
. . . . thermal plasmas
. . . . toroidal plasmas
. . corpuscular radiation
. . . energetic particles
. . . . electrons
. . . . . conduction electrons
. . . . . free electrons
. . . . . high energy electrons
. . . . . relativistic electron beams
. . . . . hot electrons
. . . . . N electrons
. . . . . negatrons
. . . . . photoelectrons
. . . . . pi-electrons
. . . . . polarons
. . . . . solar electrons
. . . . nuclei (nuclear physics)
. . . . . alpha particles
. . . . . deuterons
. . . . . even-even nuclei
. . . . . heavy nuclei
. . . . . hypernuclei
. . . . . odd-even nuclei
. . . . . odd-odd nuclei
. . . . . tritons
. . . . plasmas (physics)
. . . . . argon plasma
. . . . . beta particles
. . . . . boundary layer plasmas
. . . . . cold plasmas
. . . . . collisional plasmas
. . . . . strongly coupled plasmas
. . . . . collisionless plasmas
. . . . . cosmic plasma
. . . . . cylindrical plasmas
. . . . . dense plasmas
. . . . . plasma focus
. . . . . strongly coupled plasmas
. . . . . electron plasma
. . . . . electron-positron plasmas
. . . . . elliptical plasmas
. . . . . helium plasma
. . . . . high temperature plasmas
. . . . . hydrogen plasma
. . . . . deuterium plasma
. . . . . laser plasmas
. . . . . metallic plasmas
. . . . . cesium plasma
. . . . . uranium plasma
. . . . . microplasmas
. . . . . nitrogen plasma
. . . . . nonequilibrium plasmas
. . . . . nonuniform plasmas
. . . . . oxygen plasma
. . . . . rarefied plasmas
. . . . . relativistic plasmas
. . . . . rotating plasmas
. . . . . semiconductor plasmas
. . . . . space plasmas
. . . . . solar wind
. . . . . stellar winds
. . . . . spherical plasmas
. . . . . thermal plasmas
. . . . . toroidal plasmas
RT galactic cosmic rays
radio jets (astronomy)
solar cosmic rays

Energiya launch vehicle
(added April 1989)
GS launch vehicles
. heavy lift launch vehicles
. . Energiya launch vehicle
RT international cooperation
Russian Space Program
space commercialization

-- energy
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Any quantity with dimensions which can be represented as mass times length squared divided by time squared.
RT activation energy
Bernstein energy principle
binding energy
chemical energy
commercial energy
domestic energy
electron energy
energy conservation
energy conversion efficiency
energy of formation
enthalpy
entropy
flux (rate)
flux density
free energy
gravitational binding energy
heat
hydrogen-based energy
industrial energy
interfacial energy
internal energy
kinetic energy
molecular energy levels
nuclear binding energy
particle energy

potential energy
proton energy
radiant heating
seismic energy
solar energy
solar total energy systems
stacking fault energy
strain energy methods
surface energy
thermal energy
thermonuclear power generation
transportation energy
waterwave energy
work

energy absorption
UF reradiation
GS energy absorption
. moderation (energy absorption)
. . thermalization (energy absorption)
. . . neutron thermalization
. radiation absorption
. . electromagnetic absorption
. . . auroral absorption
. . . gamma ray absorption
. . . infrared absorption
. . . microwave absorption
. . . multiphoton absorption
. . . photoabsorption
. . . polar cap absorption
. . . ultraviolet absorption
. . . x ray absorption
. . molecular absorption
. . soil absorption
. thermal absorption
. . polar cap absorption
RT absorbers (materials)
= absorption
damping
energy conversion efficiency
gamma ray absorptiometry
heat sinks
infrared radiation
light (visible radiation)
photon absorptiometry
shock absorbers
sound transmission
vibration isolators

energy absorption films
GS thin films
. energy absorption films
RT = absorption
aluminum oxides
coatings
direct power generators
Golay detector cells
monomolecular films
photoelectric cells
photothermal conversion
selective surfaces
semiconducting films
solar energy

energy bands
GS energy bands
. Bloch band
. conduction bands
. forbidden bands
RT = bands
excitons
laser windows
quantum wells
spectral bands
windows (intervals)

energy budgets
DEF Quantitative descriptions of the total energy exchange into and out of a given physical or ecological system; may include radiation heat, kinetic, and biological process.
GS energy budgets
. Earth radiation budget
. heat budget
. . atmospheric heat budget
RT = budgets

energy conservation
GS conservation
. energy conservation
RT = energy
energy policy
power factor controllers
residential energy
resource allocation
resources

energy consumption
GS consumption
. energy consumption
RT coal utilization
commercial energy
domestic energy
= energy sources
fuel consumption
industrial energy

energy conversion
GS energy conversion
. biomass energy production
. geothermal energy conversion
. ocean thermal energy conversion
. satellite solar energy conversion
. solar energy conversion
. . photothermal conversion
. . . thermophotovoltaic conversion
. . photovoltaic conversion
. . . thermophotovoltaic conversion
. solar total energy systems
. waterwave energy conversion
RT cogeneration
commercial energy
= conversion
direct power generators
domestic energy
geothermal energy extraction
hydrogen production
hydrothermal systems
industrial energy
integrated energy systems
laser power beaming
lignite
organic wastes (fuel conversion)
power beaming
power conditioning
satellite solar power stations
solar ponds (heat storage)
solar sea power plants
space industrialization
transportation energy
waste energy utilization

energy conversion efficiency
GS efficiency
. energy conversion efficiency
RT carrier transport (solid state)
= conversion
direct power generators
= energy
energy absorption
engines
fuel cells
= generators
motors
open circuit voltage
photothermal conversion
power conditioning
power factor controllers
quantum efficiency
Redox cells
spectrophotovoltaics
thermophotovoltaic conversion
tide powered generators
transducers
volumetric efficiency
waterwave energy conversion

energy converters
USE direct power generators

energy density
USE flux density

energy dissipation
DEF The difference between energy input and output as a result of transfer of energy between two points. Used for energy loss.
UF energy loss
GS dissipation
. energy dissipation
RT friction
insertion loss
Lagrange similarity hypothesis
losses
nonadiabatic theory
= power loss
traveling charge

energy distribution
GS distribution (property)
. energy distribution
. . spectral energy distribution
RT equipartition theorem
flux density
force distribution
integrated energy systems
quantum mechanics
statistical mechanics

Energy Efficiency Transport program
USE ACEE program

energy equipartition
USE equipartition theorem

energy exchange
USE energy transfer

energy gaps (solid state)
DEF A range of forbidden energies in the band theory of solids. Used for bandgap.
UF bandgap
GS gaps
. energy gaps (solid state)
RT band structure of solids
MODFETS
modulation doping
quantum well lasers
quantum wells
solid state
= solid state physics

energy levels
DEF Any one of different values of energy which a particle, atom, or molecule may adopt under conditions where the possible values are restricted by quantizing conditions. Used for electronic levels.
UF electronic levels
GS level (quantity)
. energy levels
. . atomic energy levels

. . electron states
. . ground state
. . molecular energy levels
. . . intermolecular forces
. . . rotational states
. . . vibrational states
RT atomic excitations
atomic structure
electron tunneling
excitation
Fermi surfaces
molecular excitation
nuclear capture
nuclear models
nuclear quadrupole resonance
nuclear spin
nuclear structure
population inversion
quantum numbers
quantum theory

energy loss
USE energy dissipation

energy methods
GS structural analysis
. energy methods
. . Bernstein energy principle
. . strain energy methods
RT Castigliano variational theorem
mecbios (mathematics)
= methodology
stress analysis

energy of formation
GS chemical energy
. energy of formation
RT= energy
free energy
molecular energy levels

energy policy
GS policies
. energy policy
RT abundance
availability
coal
coal gasification
coal liquefaction
coal utilization
conservation
crude oil
depletion
= development
Earth resources
ecology
economic factors
energy conservation
fuel oils
fuels
hydrocarbon fuels
land use
lignite
logistics
mining
= nuclear energy
nuclear fuels
oil exploration
oils
operating costs
pollution
refining
reserves
resource allocation
resources
safety

energy requirements
RT= energy sources
fuel consumption
= power supplies

= energy sources
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT atmospheric energy sources
auxiliary power sources
biomass energy production
electric batteries
electric generators
electron sources
energy consumption
energy requirements
energy technology
geothermal resources
heat sources
lithium sulfur batteries
ocean thermal energy conversion
plasma power sources
point sources
propellants
rectifiers
spacecraft power supplies
tidepower
waterwave energy conversion

energy spectra
GS spectra
. energy spectra
. . electronic spectra
. . neutron spectra
RT absorption spectra
electromagnetic spectra
gamma ray astronomy
GREST (telescope)
mass spectra
molecular spectra
plasma spectra
power spectra
radiation spectra
shock spectra
spectral energy distribution
spectrophotovoltaics
vibrational spectra

energy storage
UF energy storage devices
GS energy storage
. electric energy storage
. heat storage
. magnetic energy storage
RT capacitors
compressed air
electrets
electric batteries
flywheels
fuel cells
fuels
geothermal energy utilization
heat sources
inductors
lead acid batteries
nickel hydrogen batteries
= nuclear energy
potential energy
Redox cells
regeneration
roadway powered vehicles
space station power supplies
springs (elastic)
= storage
superconductors (materials)

energy storage devices
USE energy storage

energy technology
GS technologies
. energy technology
. . geothermal technology
RT atmospheric energy sources
biomass energy production
coal utilization
combined cycle power generation
Earth resources
electrostatic bonding
= energy sources
fuel cell power plants
gas recovery
geothermal energy extraction
heat engines
hydrocarbon fuel production
hydrogen-based energy
lignite
magnetic energy storage
offshore energy sources
oil recovery
phosphoric acid fuel cells
photoelectrochemical devices
piezothermal conversion
quantum efficiency
residential energy
solar cooling
solar energy conversion
solar houses
space cooling (buildings)
Trombe walls
waste heat

energy transfer
UF energy exchange
GS energy transfer
. linear energy transfer (LET)
RT acoustic coupling
antenna couplers
coupling circuits
cyclotron resonance
electron pumping
gas transport
gas-liquid interactions
heat transfer
Helmholtz theory
Lagrange similarity hypothesis
mass transfer
momentum transfer
nonadiabatic conditions
nonisothermal processes
nuclear pumping
plasma heating
Poynting theorem
radiative transfer
terminal ballistics
tranalaming

engine airframe integration
DEF Physics of the interface between the engine and the airframe.
RT aerodynamic characteristics
aerodynamic configurations
aircraft design
aircraft engines
airframes

engine analyzers
GS measuring instruments
. analyzers
. . engine analyzers

engine control
DEF Any control for regulating the power and speed of an engine, such as the throttle, mixture

control, manifold pressure regulator, fuel pressure control, or supercharger control.
GS engine control
. . rocket engine control
. . turbojet engine control
RT air start
aircraft control
automatic control
combustion control
∞ control
electric control
flight instruments
fuel control
hydraulic control
manual control
pneumatic control
remote control
spacecraft control
speed control
temperature control
thrust control
variable stream control engines

engine coolants
DEF Liquids used in an engine cooling system to transfer heat from the engine to the radiator.
GS coolants
. engine coolants
RT cooling
cooling systems

engine design
GS engine design
. rocket engine design
RT aircraft design
computer aided design
∞ design
helicopter design
missile design
nozzle design
product development
reactor design
spacecraft design
Stirling engines
volumetric efficiency

engine failure
GS failure
. engine failure
RT aborted missions
∞ cut-off
ingestion (engines)
∞ stalling

engine inlets
GS intake systems
. air intakes
. . engine inlets
RT bypass ratio
cavity flow
∞ diffusers
hypersonic inlets
inlet airframe configurations
inlet nozzles
inlet temperature
internal compression inlets
nacelles

engine monitoring instruments
GS measuring instruments
. engine monitoring instruments
RT fault detection
flight instruments
systems health monitoring

engine noise
GS elastic waves
. sound waves
. . noise (sound)
. . . engine noise
. . . . rocket engine noise
RT aircraft noise
aircraft runup
jet aircraft noise
propeller noise
quiet engine program

engine parts
RT carburetors
clutches
combustion chambers
∞ components
dump combustors
flywheels
internal combustion engines
pistons
retirement for cause
rocket linings
spare parts
turbine blades
turbine wheels
valves

engine primers
RT internal combustion engines
∞ primers
starting

engine relight (in-flight)
USE air start

engine starters
GS starters
. engine starters
RT engines
internal combustion engines
jet engines

engine testing laboratories
GS laboratories
. engine testing laboratories
test facilities
. engine testing laboratories
RT engines

engine tests
GS engine tests
. cold flow tests
. pushing tests
. space electric rocket tests
. static firing
RT aircraft runup
altitude tests
captive tests
flight tests
fuel tests
full scale tests
ground tests
lubricant tests
missile tests
nondestructive tests
prelaunch tests
propellant tests
propulsive efficiency
rocket engine design
rocket test facilities
SERT 1 spacecraft
SERT 2 spacecraft
static tests
Stirling engines
test firing
test stands
testing time
∞ tests
vibration tests

∞ engineering
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aeronautical engineering
aerospace engineering
aircraft production costs
anthropometry
bioengineering
bioinstrumentation
biometrics
biotelemetry
body measurement (biology)
chemical engineering
concurrent engineering
electrical engineering
environmental engineering
human factors engineering
man machine systems
mechanical engineering
production engineering
reactor technology
reliability engineering
software engineering
structural engineering
systems engineering
underwater engineering
value engineering

engineering development
USE product development

engineering drawings
UF mechanical drawings
GS documents
. drawings
. . engineering drawings
. . . blueprints
RT circuit diagrams
descriptive geometry
∞ design
dimensions
graphical arts
layouts
lofting
reproduction (copying)

engineering management
GS management
. industrial management
. . engineering management
RT allocations
∞ budgets
goals
manpower
priorities
research management
resource allocation
resources

engineering test reactors
UF ETR (reactor)
GS nuclear reactors
. engineering test reactors
RT reactor design
reactor technology

Engineering Test Satellites
(added October 1997)
SN (LIMITED TO THE JAPANESE ETS SERIES OF SATELLITES)
UF ETS series satellites
GS artificial satellites
. Engineering Test Satellites

Japanese spacecraft
Engineering Test Satellites

engineers
(added November 1982)
GS navigator
. engineers
personnel
. engineers
RT events
scientists

engines
SN (LIMITED TO MACHINES WITH SELF-CONTAINED POWER SOURCES FOR CONTINUOUS OPERATION—SEE MOTORS FOR MACHINES UTILIZING EXTERNAL POWER SOURCES FOR NORMAL OPERATION)
DEF Machines or apparatus that convert energy, especially heat energy, into work. Used for gas generator engines.
UF gas generator engines
GS engines
. air breathing engines
. . gas turbine engines
. . . hydrogen engines
. . . jet engines
. . . . ramjet engines
. . . . . integral rocket ramjets
. . . . . low volume ramjet engines
. . . . . pulsejet engines
. . . . . supersonic combustion ramjet engines
. . . . . turboramjet engines
. . . . turbojet engines
. . . . . Bristol-Siddeley Olympus 593 engine
. . . . . Bristol-Siddeley Viper engine
. . . . . ducted fan engines
. . . . . J-33 engine
. . . . . J-34 engine
. . . . . J-47 engine
. . . . . J-52 engine
. . . . . J-57 engine
. . . . . J-58 engine
. . . . . J-65 engine
. . . . . J-69-T-25 engine
. . . . . J-71 engine
. . . . . J-73 engine
. . . . . J-75 engine
. . . . . J-79 engine
. . . . . J-85 engine
. . . . . J-93 engine
. . . . . RA-28 engine
. . . . . turbofan engines
. . . . . Bristol-Siddeley BS.53 engine
. . . . . CF-700 engine
. . . . . convertible fan-shaft engines
. . . . . J-97 engine
. . . . . TF-30 engine
. . . . . TF-34 engine
. . . . . TF-41 engine
. . . . . turboprop engines
. . . . . T-34 engine
. . . . . T-38 engine
. . . . . T-53 engine
. . . . . T-55 engine
. . . . . T-56 engine
. . . . . T-63 engine
. . . . . T-64 engine
. . . . . T-74 engine
. . . . . T-76 engine
. . . . . T-78 engine
. . . . . turboramjet engines
. . . T-58 engine
. . aircraft engines
. . . convertible fan-shaft engines
. . . helicopter engines
. . . J-52 engine
. . . J-58 engine
. . . J-97 engine
. . . T-34 engine
. . . T-38 engine
. . . T-55 engine
. . . T-63 engine
. . . T-76 engine
. . . T-78 engine
. . . TF-30 engine
. . . TF-34 engine
. . . TF-41 engine
. . . variable cycle engines
. . . variable stream control engines
. external combustion engines
. . Stirling engines
. internal combustion engines
. . diesel engines
. . gas turbine engines
. . . hydrogen engines
. . . jet engines
. . . . ramjet engines
. . . . . integral rocket ramjets
. . . . . low volume ramjet engines
. . . . . pulsejet engines
. . . . . supersonic combustion ramjet engines
. . . . . turboramjet engines
. . . . turbojet engines
. . . . . Bristol-Siddeley Olympus 593 engine
. . . . . Bristol-Siddeley Viper engine
. . . . . ducted fan engines
. . . . . J-33 engine
. . . . . J-34 engine
. . . . . J-47 engine
. . . . . J-52 engine
. . . . . J-57 engine
. . . . . J-58 engine
. . . . . J-65 engine
. . . . . J-69-T-25 engine
. . . . . J-71 engine
. . . . . J-73 engine
. . . . . J-75 engine
. . . . . J-79 engine
. . . . . J-85 engine
. . . . . J-93 engine
. . . . . RA-28 engine
. . . . . turbofan engines
. . . . . Bristol-Siddeley BS.53 engine
. . . . . CF-700 engine
. . . . . convertible fan-shaft engines
. . . . . J-97 engine
. . . . . TF-30 engine
. . . . . TF-34 engine
. . . . . TF-41 engine
. . . . . turboprop engines
. . . . . T-34 engine
. . . . . T-38 engine
. . . . . T-53 engine
. . . . . T-55 engine
. . . . . T-56 engine
. . . . . T-63 engine
. . . . . T-64 engine
. . . . . T-74 engine
. . . . . T-76 engine
. . . . . T-78 engine
. . . . . turboramjet engines
. . . T-58 engine
. . helicopter engines
. . rotary engines
. . Wankel engines
. JATO engines
. Marquardt R4D engine
. piston engines
. . diesel engines
. . free-piston engines
. . Stirling engines
. pulsed jet engines
. rocket engines
. . booster rocket engines
. . . AJ-10 engine
. . . Algol engine
. . . apogee boost motors
. . . H-1 engine
. . . LR-87-AJ-5 engine
. . . M-1 engine
. . . M-55 engine
. . . MA-2 engine
. . . MA-3 engine
. . . MA-5 engine
. . . Nike booster rocket engines
. . . P-1 engine
. . . rocket engine SKS-11000
. . . Space Shuttle Boosters
. . . . Advanced Solid Rocket Motor (STS)
. . . X-405 engine
. . ducted rocket engines
. . electric rocket engines
. . . electrostatic engines
. . . electrothermal engines
. . . . arc jet engines
. . . . plasma engines
. . . . . two stage plasma engines
. . . . resistojet engines
. . . ion engines
. . . . cesium engines
. . . . mercury ion engines
. . . . RIT engines
. . HEUS rocket engines
. . hot water rocket engines
. . hybrid propellant rocket engines
. . . Sherpa rocket engines
. . liquid propellant rocket engines
. . . AJ-10 engine
. . . F-1 rocket engine
. . . H-1 engine
. . . hydrazine engines
. . . hydrogen oxygen engines
. . . . J-2 engine
. . . . M-1 engine
. . . . RL-10-A-1 engine
. . . . RL-10-A-3 engine
. . . liquid air cycle engines
. . . LR-62-RM-2 engine
. . . LR-87-AJ-5 engine
. . . LR-91-AJ-5 engine
. . . MA-2 engine
. . . MA-3 engine
. . . MA-5 engine
. . . oxygen-hydrocarbon rocket engines
. . . RL-10 engines
. . . . RL-10-A-1 engine
. . . . RL-10-A-3 engine
. . . Space Shuttle Main Engine
. . . X-405 engine
. . . XLR-99 engine
. . . YLR-91-AJ-1 engine
. . M-100 engine
. . nitrohydrazine engines
. . . Orbit Maneuvering Engine (Space Shuttle)
. . nozzleless rocket engines
. . nuclear engine for rocket vehicles
. . nuclear ramjet engines
. . nuclear rocket engines
. . . nuclear lightbulb engines
. . restartable rocket engines
. . retrorocket engines

.... BE-3 engine
.. reusable rocket engines
.. solid propellant rocket engines
.... Algol engine
.... apogee boost motors
.... ASROC engine
.... Hercules engine
.... M-46 engine
.... M-55 engine
.... M-56 engine
.... M-57 engine
.... Nike booster rocket engines
.... P-1 engine
.... SL-3 rocket engine
.... Space Shuttle Boosters
..... Advanced Solid Rocket Motor (STS)
.... SYNCOM apogee engines
.... TX-77 engine
.... TX-354 engine
.... X-248 engine
.... X-254 engine
.... X-258 engines
..... X-258-B1 engine
.... X-259 engine
.... XM-33 engine
.. kuttaner rocket engines
.. turborocket engines
.. ullage rocket engines
.. upper stage rocket engines
.. Vernier engines
.... control rockets
.... SYNCOM apogee engines
.. aerospike engines
. torpedo engines
.. turborocket engines
.. ullage rocket engines
.. Vernier engines
.... control rockets
.... SYNCOM apogee engines
. turbine engines
.. gas turbine engines
.... hydrogen engines
.... jet engines
..... ramjet engines
..... integral rocket ramjets
..... low volume ramjet engines
..... pulsejet engines
..... supersonic combustion ramjet engines
..... turboramjet engines
..... turbojet engines
..... Bristol-Siddeley Olympus 593 engine
..... Bristol-Siddeley Viper engine
..... ducted fan engines
..... J-33 engine
..... J-34 engine
..... J-47 engine
..... J-52 engine
..... J-57 engine
..... J-58 engine
..... J-60 engine
..... J-69-T-25 engine
..... J-71 engine
..... J-73 engine
..... J-75 engine
..... J-79 engine
..... J-85 engine
..... J-93 engine
..... RA-28 engine
..... turbofan engines
..... Bristol-Siddeley BS.53 engine
..... CF-700 engine
..... convertible fan-shaft engines
..... J-97 engine
..... TF-30 engine
..... TF-34 engine
..... TF-41 engine
..... turboprop engines
..... T-34 engine
..... T-38 engine
..... T-53 engine
..... T-55 engine
..... T-56 engine
..... T-62 engine
..... T-64 engine
..... T-74 engine
..... T-76 engine
..... T-78 engine
..... turboramjet engines
.... T-58 engine
RT auxiliary propulsion
carburetors
combustion chambers
displacement
energy conversion efficiency
engine starters
engine testing laboratories
exhaust systems
expendable stages (spacecraft)
fuel consumption
fuel systems
geothermal energy conversion
heat engines
heat sources
ignition systems
lubrication
— machinery
missile components
motors
— power plants
propulsion
reaction products
shutdowns
speed regulators
supersonic combustion
thermodynamic efficiency
thermodynamics
transportation energy
turbines
— vehicles

England
GS nations
. United Kingdom
.. England
RT Europe

English Channel
RT Atlantic Ocean
France
North Sea
United Kingdom

English language
GS languages
. English language
RT speech
words (language)

engraving
RT etching
printing

enhanced vision
(added June 1995)
UF EVS
synthetic vision
GS vision
. enhanced vision
RT aircraft landing
landing aids
multisensor applications
night vision
visibility

enlargement
USE augmentation

enlarging
USE expansion

ENO schemes
USE essentially non-oscillatory schemes

enrichment
GS enrichment
. isotopic enrichment
.. jet membrane process
RT beneficiation
concentrating
purification
refining
upgrading

Enrico Fermi atomic power plant
GS electric power plants
. nuclear power plants
.. Enrico Fermi atomic power plant
nuclear electric power generation
. nuclear power plants
.. Enrico Fermi atomic power plant
RT breeder reactors
fast nuclear reactors
liquid metal cooled reactors
— power plants

Enskog-Chapman theory
USE Chapman-Enskog theory

enstatite
GS chain silicates
. orthosilicates
.. pyroxenes
... enstatite
magnesium compounds
. enstatite
minerals
. pyroxenes
.. enstatite
silicon compounds
. silicates
.. pyroxenes
... enstatite
RT chondrule
igneous rocks
regolith
rocks
soils

enstrophy
USE vorticity

Enterprise (Orbiter)
UF *Space Shuttle Orbiter 101*
GS manned spacecraft
. space shuttles
.. Space Shuttle orbiters
... Enterprise (Orbiter)
reentry vehicles
. recoverable spacecraft
.. reusable spacecraft
... space shuttles
.... Space Shuttle orbiters
..... Enterprise (Orbiter)
RT manned space flight
— spacecraft

enthalpy
DEF A mathematically defined thermodynamic function of state. Used for heat content.
UF heat content
GS heat
. enthalpy
. . Gibbs free energy
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. thermodynamic properties
. . enthalpy
. . . Gibbs free energy
. . . heat of dissociation
. . . heat of formation
. . . heat of solution
. . . latent heat
. . . . heat of fusion
. . . . heat of vaporization
RT adiabatic conditions
drying
= energy
entropy
free energy
Gibbs-Helmholtz equations
heat measurement
Joule-Thomson effect
Mollier diagram
specific heat
thermochemistry
thermodynamics

enthalpy-entropy diagrams
USE Mollier diagram

entire functions
UF integral functions
GS analysis (mathematics)
. complex variables
. . analytic functions
. . . entire functions
functions (mathematics)
. analytic functions
. . entire functions

entomology
RT insecticides
insects
= science
= zoology

entrainment
RT aeration
aerosols
blowing
Coanda effect
dispersing
spraying
suspending (mixing)

entrances
RT turbine
doors
intake systems
= thresholds
tunnels

entrapment
RT accumulation
confusion
escape (abandonment)
radiation belts
tangling
traps

entropy
DEF A measure of the extent to which the energy of a system is unavailable.
GS thermodynamic properties
. entropy
RT Crocco method
= energy
enthalpy
heat
maximum entropy method
Mollier diagram
nonrandomicity
Shannon-Wiener measure
taphograms
thermochemistry
thermodynamics

entropy (statistics)
DEF A factor or quantity that is a function of a mechanical system and is equal to the logarithm of the probability of the particular arrangement in that state.
GS entropy (statistics)
. maximum entropy method
. minimum entropy method
RT= statistics

= entry
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT atmospheric entry
reentry

entry guidance (STS)
DEF The precise steering commands for trajectory from initial penetration of the Earth's atmosphere until the terminal area guidance is activated at an Earth-relative speed (about 2500 fps).
GS guidance (motion)
. entry guidance (STS)
RT atmospheric entry
flight control
hypersonic reentry
pointing control systems
space shuttles
Space Transportation System flights
spacecraft reentry
terminal guidance

enumeration
RT counting
lists
number theory

= envelopes
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT coverings
enclosures
flight envelopes
limits (mathematics)
stellar envelopes

environment effects
SN (EFFECTS ON ENVIRONMENT)
RT air pollution
coastal ecology
coastal water
contaminants
contamination
debris
deforestation
= effects
environments
eutrophication
exhaust gases
greenhouse effect
habitats
ice environments
man environment interactions
marine biology
marine environments
metabolic wastes
noise pollution
poisons
pollution
sewage
soil erosion
thermal pollution
waste disposal
wastes
water pollution
water quality
water resources
wetlands
wildlife

environment management
GS management
. environment management
RT conservation
Earth resources
environmental monitoring
land management
land use
man environment interactions
resources management
waste management
water management
water resources

environment models
GS models
. environment models
RT atmospheric models
climate models
ecology
test chambers

environment pollution
GS pollution
. environment pollution
. . air pollution
. . . global air pollution
. . . indoor air pollution
. . soil pollution
. . water pollution
. . . oil pollution
RT aerobiology
aerosols
air sampling
clean energy
Earth resources
environmental monitoring
environmental surveys
human wastes
metabolic wastes
noise pollution
oil slicks
poisons
pollution monitoring
pollution transport
radioactive wastes
thermal pollution
waste disposal

environment protection
GS protection
. environment protection
RT air pollution
Central Atlantic Regional Ecol Test Site
effluents
environmental monitoring

pollution
radioactive wastes
waste disposal
water pollution

environment simulation
QS simulation
. environment simulation
. . acoustic simulation
. . altitude simulation
. . space environment simulation
. . thermal simulation
. . . weightlessness simulation
. . . . neutral buoyancy simulation
RT atmospheric entry simulation
atmospheric models
environmental tests
. flight simulation
virtual reality

environment simulators
QS simulators
. environment simulators
. . Lunar Gravity Simulator
. . solar simulators
. . space simulators
. . . High Vacuum Orbital Simulator
. . . Langley complex coordinator
RT test chambers

environmental chambers
USE test chambers

environmental chemistry
DEF Collective term comprising the complex chemical relationships involving the atmosphere, climatology, air and water pollution, fuels, pesticides, energy, biochemistry, geochemistry, etc.
QS environmental chemistry
. aerothermochemistry
. atmospheric chemistry
. geochemistry
. . biogeochemistry
. marine chemistry
RT air pollution
∞ chemistry
climatology
hydrocarbon fuels
pesticides
smog
waste disposal
water pollution

environmental control
QS environmental control
. pollution control
RT airbreathing
artificial gravity
automatic control
biosatellites
cabin atmospheres
clean rooms
∞ control
emergency life sustaining systems
environments
habitability
manned reentry
manned spacecraft
pressurized cabins
resources management
spacecraft cabin atmospheres
spacecraft environments
temperature control
test chambers
weather modification
windshields

environmental engineering
RT∞ aerospace sciences
clean energy
climatology
comfort
∞ engineering
environments
heating
human factors engineering
illuminating
life sciences
life support systems
meteorology
physiological effects
psychological effects
shelters
space heating (buildings)
Starlab program
temperature control
temperature distribution
terraforming
ventilation
waste disposal
waste management

environmental index
RT physiological tests

environmental laboratories
QS laboratories
. environmental laboratories
test facilities
. environmental laboratories
RT human factors laboratories
test chambers

environmental monitoring
RT ambience
environment management
environment pollution
environment protection
infrared radiometers
meteorology
monitors
oceanography
weather forecasting

environmental quality
QS quality
. environmental quality
. . air quality
. . water quality
RT air pollution
contaminants
environments
Global Air Sampling Program
marine biology
noise pollution
pollution
thermal pollution
water pollution

Environmental Research Satellites
UF Orbital/Ist Research Satellites
QS artificial satellites
. scientific satellites
. . Environmental Research Satellites
. . . ERS 17
. . . ERS 18
. . . Intasat satellite
RT Atlas Agena launch vehicles

environmental surveys
SN (LIMITED TO INDEXING ENVIRONMENTAL IMPACT STATEMENTS)
RT aerosols
air pollution
Earth resources
environment pollution
human reactions
metabolic wastes
poisons
pollution
pollution control
radioactive wastes
thermal pollution
waste disposal
water pollution

environmental temperature
USE ambient temperature

environmental tests
QS environmental tests
. cold weather tests
. corrosion tests
. . corrosion test rings
. . salt spray tests
. high temperature tests
. low temperature tests
. underwater tests
. . neutral buoyancy simulation
RT ASSET project
electronic equipment tests
environment simulation
high altitude tests
∞ materials tests
orbital space tests
physiological tests
psychological tests
reverberation chambers
spin tests
test chambers
∞ tests
thermal cycling tests
thermal vacuum tests
vibration tests

environments
DEF External conditions or the sum of such conditions, in which pieces of equipment, living organisms, or systems operate as in temperature environment, vibration environment, or space environment. Environments are usually specified by a range of values, and may be either natural or artificial.
QS environments
. aerospace environments
. . cislunar space
. . deep space
. . . interplanetary space
. . . interstellar space
. Earth orbital environments
. Earth environment
. Earth magnetosphere
. . geomagnetic tail
. . magnetopause
. . magnetosheath
. extraterrestrial environments
. . cislunar space
. . deep space
. . . interplanetary space
. . . interstellar space
. Earth orbital environments
. . lunar environment
. . . lunar atmosphere
. planetary environments
. . Mars environment
. . . Mars atmosphere
. . planetary atmospheres
. . . helium hydrogen atmospheres
. . . Jupiter atmosphere
. . . Mars atmosphere
. . . Mercury atmosphere
. . . Neptune atmosphere

planetary ionosphere
Pluto atmosphere
Saturn atmosphere
Uranus atmosphere
Venus atmosphere
Venus clouds
planetary magnetospheres
planetary magnetotails
satellite atmospheres
lunar atmosphere
stellar atmospheres
chromosphere
solar atmosphere
solar transition region
frictionless environments
heterosphere
high altitude environments
high gravity environments
high temperature environments
ice environments
inner radiation belt
low temperature environments
marine environments
middlatitude atmosphere
rotating environments
spacecraft environments
thermal environments
RT adiabatic conditions
air
air pollution
air quality
ambience
atmospheres
coastal ecology
coastal plains
controlled atmospheres
Earth atmosphere
ecology
economic impact
electromagnetic interference
environment effects
environmental control
environmental engineering
environmental quality
global air pollution
gravitation
habitability
habitats
human factors engineering
humidity
life support systems
nonpoint sources
performance
physiological effects
plants (botany)
pressure
programming environments
psychological effects
regimes
temperature
thermal pollution
vacuum effects
weightlessness

enzyme activity
GS metabolism
. enzyme activity
. . fermentation
RT bioconversion
diabetes mellitus
digestive system
lysosomes
tyrosine

enzymes
GS biopolymers
. proteins
. . enzymes
. . . aldolase
. . . amidase
. . . carbonic anhydrase
. . . catalase
. . . cholinesterase
. . . cytochromes
. . . hexokinase
. . . lysozyme
. . . nuclease
. . . oxidase
. . . papain
. . . pepsin
. . . protease
. . . thrombin
. . . trypsin
organic compounds
. proteins
. . enzymes
. . . aldolase
. . . amidase
. . . carbonic anhydrase
. . . catalase
. . . cholinesterase
. . . cytochromes
. . . hexokinase
. . . lysozyme
. . . nuclease
. . . oxidase
. . . papain
. . . pepsin
. . . protease
. . . thrombin
. . . trypsin
RT activation (biology)
catalysis
coenzymes
enzymology

enzymology
GS biochemistry
. enzymology
RT digesting
digestive system
enzymes
metabolism
nitrogen metabolism

EOCR (reactor)
USE experimental organic cooled reactors

EOGO
USE EGO

EOLE satellites
GS artificial satellites
. French satellites
. . EOLE satellites
. meteorological satellites
. . EOLE satellites
RT French space program
GEOLE satellites
geophysical satellites

EOPAP
USE Earth & Ocean Physics Applications Program

EOR (rendezvous)
USE Earth orbital rendezvous

EOS
USE Earth Observing System (EOS)

EOS data and information system
(added April 1995)
DEF A system to manage data resulting from NASA's Earth Observing Systems's science research satellites and field measurement programs, and other data essential for interpreting these measurements.
UF *EOSDIS*
GS information systems
. EOS data and information system
RT Earth Observing System (EOS)
Earth Resources Information System
remote sensing
satellite observation
scientific satellites

EOS-A
USE Landsat E

EOS-B
USE Landsat F

EOSDIS
USE EOS data and information system

eosinophils
DEF A type of white blood cell or leukocyte which stains a red color with eosin stain; normally about 2 to 3 percent of white cells in the blood but tending to decrease during stressful situations and thus usable as an index for stress.
GS cells (biology)
. blood cells
. . leukocytes
. . . eosinophils
RT cytoplasm

EPE-A
USE Explorer 12 satellite

EPE-B
USE Explorer 14 satellite

EPE-C
USE Explorer 15 satellite

EPE-D
USE Explorer 26 satellite

ephemerides
DEF Periodical publications tabulating the predicted positions of celestial bodies at regular intervals, such as daily, and containing other data of interest to astronomers. A publication giving similar information useful to a navigator is called an almanac.
GS ephemerides
. planet ephemerides
RT astronomical catalogs
celestial mechanics
ephemeris time
orbits
position (location)

ephemeris time
DEF The uniform measure of time defined by the laws of dynamics and determined in principle from the orbital motions of the planets, specifically, the orbital motion of the Earth as represented by Newcomb's Tables of the sun.
GS time
. ephemeris time
RT ephemerides
universal time

epicardium
GS anatomy
. circulatory system
. . cardiovascular system
. . . heart
. . . . epicardium
membranes
. epicardium
tissues (biology)

. epicardium

epicycloids
GS geometry
. curves (geometry)
. . epicycloids
. Euclidean geometry
. . analytic geometry
. . . epicycloids
RT cusps (mathematics)

epidemiology
DEF The branch of medicine that studies the sources, distribution, and determinants of diseases and injuries in human populations.
GS medical science
. epidemiology
RT infectious diseases
vaccines
veterinary medicine

epidermis
GS anatomy
. skin (anatomy)
. . epidermis
RT contact dermatitis

epilepsy
GS diseases
. epilepsy
RT cramps
human pathology
shaking

Epimetheus
(added July 1995)
DEF A natural satellite of Saturn, orbiting at a mean distance of 151,422 kilometers.
GS celestial bodies
. natural satellites
. . Saturn satellites
. . . Epimetheus
RT Saturn (planet)

epinephrine
UF adrenaline
GS amines
. catecholamine
. . epinephrine
. . . norepinephrine
drugs
. epinephrine
. . norepinephrine
RT adrenal gland
dopamine
heart rate
stimulants

epitaxy
DEF The oriented growth of a crystalline substance on a substrate of the same or different crystalline substance.
GS growth
. crystal growth
. . epitaxy
. . . atomic layer epitaxy
. . . electroepitaxy
. . . liquid phase epitaxy
. . . molecular beam epitaxy
. . . vapor phase epitaxy
RT bipolar transistors
crystal lattices
crystal structure
junction transistors
laser deposition
pulsed laser deposition

epithelium
GS tissues (biology)
. epithelium
RT anatomy
histology
peritoneum
skin (anatomy)

EPNL
USE **effective perceived noise levels**

epochs
USE **time measurement**

epoxidation
GS chemical reactions
. epoxidation
RT oxidation

epoxides
USE **epoxy compounds**

epoxy compounds
UF epoxides
GS epoxy compounds
. endrin
. ethylene oxide
. hyoscine
. propylene oxide
RT ∞ chemical compounds
ethers

epoxy matrix composites
DEF High strength compositions consisting of epoxy resin and a reinforcing matrix of filaments or fibers of glass, metal, or other materials.
GS composite materials
. polymer matrix composites
. . epoxy matrix composites
. . . boron-epoxy composites
. . . graphite-epoxy composites
RT aramid fiber composites
aramid fibers
braided composites
fiber orientation
low density research
∞ materials
∞ matrices
matrix materials
pultrusion
sandwich structures
woven composites

epoxy resins
DEF Viscous liquids or brittle solids containing epoxide groups that can be crosslinked into final form by means of a chemical reaction with a variety of setting agents used with or without heat.
GS plastics
. synthetic resins
. . thermosetting resins
. . . epoxy resins
. . . . phenolic epoxy resins
resins
. synthetic resins
. . thermosetting resins
. . . epoxy resins
. . . . phenolic epoxy resins
RT adhesives
boron reinforced materials
boron-epoxy composites
coatings
glass transition temperature
graphite-epoxy composites
lay-up
prepregs
resin matrix composites

equalizers (circuits)
RT attenuators
frequency response
phase shift
signal processing

∞ **equations**
SN [USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW]
UF *balance equations*
forced vibratory motion equations
RT adiabatic equations
approximation
Bernoulli theorem
Bethe-Salpeter equation
biharmonic equations
Blasius equation
Boltzmann transport equation
Boltzmann-Vlasov equation
Born approximation
boundary layer equations
Brillouin-Wigner equation
Burger equation
Cauchy-Riemann equations
Chandrasekhar equation
Chaplygin equation
conservation equations
constitutive equations
continuity equation
convection-diffusion equation
cubic equations
difference equations
differential equations
diophantine equation
Dirac equation
Donnell equations
Duffing differential equation
eikonal equation
Einstein equations
Ekker equation
elliptic differential equations
equations of motion
equations of state
equilibrium equations
Euler equations of motion
Euler-Cauchy equations
Euler-Lagrange equation
Euler-Lambert equation
Faddeev equations
Fallner-Skan equation
Fick's equation
flow equations
Fokker-Planck equation
Fredholm equations
Gauss equation
Gibbs adsorption equation
∞ Gibbs equations
Gibbs-Helmholtz equations
Glenn method
Hamilton-Jacobi equation
∞ Helmholtz equations
Helmholtz vorticity equation
Hugoniot equation of state
hydrodynamic equations
hyperbolic differential equations
identities
inflow equation
integral equations
kinematic equations
kinetic equations
Klein-Gordon equation
Korteweg-DeVries equation
Krook equation
Lame wave equations
Landau-Ginzburg equations
Laplace equation
linear equations
linear evolution equations
linearization

Louville equations
macroscopic equations
Mathieu function
Maxwell equation
Monge-Ampere equation
Navier-Stokes equation
nonholonomic equations
nonlinear equations
nonlinear evolution equations
Orr-Sommerfeld equations
parabolic differential equations
partial differential equations
Pfaff equation
Poisson equation
polynomials
primitive equations
quadratic equations
quartic equations
Rayleigh equations
reaction-diffusion equations
Reynolds equation
roots of equations
Saha equations
Schroedinger equation
semiempirical equations
shallow shell equations
simultaneous equations
singular integral equations
Stokes-Beltrami equation
thermodynamics
Vlasov equations
Volterra equations
Von Karman equation
vorticity equations
wave equations
Wiener Hopf equations

equations of motion
DEF A set of equations which give information regarding the motion of a body or of a point in space as a function of time when initial position and initial velocity are known. Used for motion equations.
UF motion equations
GS **equations of motion**
. Euler equations of motion
. Euler-Lagrange equation
. kinetic equations
. . hydrodynamic equations
. . . Burnett equations
. . . Helmholtz vorticity equation
. . kinematic equations
. Navier-Stokes equation
. Reynolds equation
RT autonomy
Bethe-Salpeter equation
celestial mechanics
classical mechanics
computational fluid dynamics
continuity equation
control moment gyroscopes
∞ dynamics
Einstein equations
∞ equations
equilibrium equations
Hamilton-Jacobi equation
inertia principle
kinematics
Lissajous figures
Mach inertia principle
moments of inertia
motion aftereffects
spinning unguided rocket trajectory
stability
systems stability
trajectories
trajectory analysis
variable mass systems
von Zeipel method

equations of state
DEF Equations relating temperature, pressure, and volume of a system in thermodynamic equilibrium. Used for state equations.
UF state equations
GS **equations of state**
. Hugoniot equation of state
RT adiabatic equations
BBGKY hierarchy
Bose geometry
compressibility
continuity equation
∞ equations
equilibrium equations
ideal fluids
ideal gas
kinetic theory
Moller diagram
real gases
thermodynamics
virial coefficients

equatorial atmosphere
DEF The composition and characteristics of the Earth's atmosphere at and/or near the equator.
RT∞ atmospheres
atmospheric composition
meteorological parameters
middle atmosphere
tropical meteorology
tropical regions

equatorial electrojet
GS electric current
. ionospheric currents
. . electrojets
. . . **equatorial electrojet**
electricity
. atmospheric electricity
. . ionospheric currents
. . . electrojets
. . . . **equatorial electrojet**
RT auroral electrojets

equatorial orbits
DEF Inclined orbits with an inclination of zero degrees. The plane of an equatorial orbit contains the equator of the primary body.
GS orbits
. **equatorial orbits**
. . stationary orbits
RT circular orbits
Earth orbits
elliptical orbits
geosynchronous orbits
lunar orbits
orbital mechanics
planetary orbits
polar orbits
satellite orbits
spacecraft orbits
twenty-four hour orbits

equatorial regions
DEF Areas on or near the Earth's equator; regions between the Tropic of Cancer and the Tropic of Capricorn (23 degrees 27 minutes North or South of the Equator).
GS regions
. **equatorial regions**
RT arid lands
Earth surface
tropical regions

equators
DEF The primary great circle of a sphere or spheroid, such as the Earth, perpendicular to the polar axis; or a line resembling or approximating such a circle.
GS **equators**
. lunar equator
. magnetic equator
RT coordinates
rotating spheres
transequatorial propagation

∞ **equilibrium**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF A state of dynamic balance between the opposing actions, reactions, or velocities of a reversible process.
RT acid base equilibrium
aerostatics
balance
balancing
body sway test
chemical equilibrium
diffusion
diffusion coefficient
dynamic characteristics
equilibrium equations
heat of dissociation
homeostasis
isostasy
liquid-vapor equilibrium
loads (forces)
Maxwell-Maliv method
nonequilibrium conditions
Onsager relationship
plasma equilibrium
relaxation (mechanics)
relaxation time
stability
stabilization
statics
steady state
systems stability
thermodynamic equilibrium
thermodynamic properties
thermodynamics
transition points
unsteady state
variability
water balance

equilibrium diagrams
USE **phase diagrams**

equilibrium equations
RT analysis (mathematics)
∞ equations
equations of motion
equations of state
∞ equilibrium

equilibrium flow
DEF Gas flow in which energy is constant along streamlines and the composition of the gas at any point is not time dependent. Used for steady state flow.
UF steady state flow
GS fluid flow
. gas flow
. . **equilibrium flow**
. . . frozen equilibrium flow
. . . shifting equilibrium flow
RT Eyring theory
heat transmission
nonequilibrium flow
plasma equilibrium

quasi-steady states
steady flow

equilibrium methods
SN (LIMITED TO STRUCTURAL ANALYSIS)
GS structural analysis
. **equilibrium methods**
RT matrix methods
∞ methodology
variational principles

equinoxes
DEF One of two points of intersection of the ecliptic and the celestial equator occupied by the sun when its declination is zero degrees.
RT seasons
solar position
solstices
winter

equipartition theorem
UF energy equipartition
GS theorems
. **equipartition theorem**
RT degrees of freedom
energy distribution
kinetic energy
specific heat

∞ equipment
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF apparatus
RT abort apparatus
absorbers (equipment)
accumulators (computers)
air conditioning equipment
airborne equipment
aircraft equipment
airport surface detection equipment
audio equipment
automatic test equipment
bedding equipment
bombing equipment
breathing apparatus
communication equipment
computer storage devices
consoles
cryogenic computer storage
cryogenic equipment
data processing equipment
distillation equipment
electromechanical devices
electronic equipment
ground support equipment
handling equipment
hardware
heating equipment
hydraulic equipment
laboratory equipment
lighting equipment
lunar based equipment
lunar excavation equipment
mechanical devices
medical equipment
miniature electronic equipment
onboard equipment
peripheral equipment (computers)
photographic equipment
pneumatic equipment
portable equipment
radar equipment
rigging
safety devices
self erecting devices
service life
spacecraft equipment
survival equipment
syringes
television equipment
∞ test equipment
wind tunnel apparatus
x ray apparatus

equipment specifications
GS specifications
. **equipment specifications**
RT aircraft production
commonality
∞ design
dynamic range
functional design specifications
maintenance
procurement

equipotentials
GS fluid flow
. potential flow
. . **equipotentials**
RT∞ flow graphs
flow nets

equivalence
GS mathematical logic
. set theory
. . **equivalence**
RT parity
partitions (mathematics)

equivalent circuits
GS circuits
. **equivalent circuits**
RT duality principle
network analysis
network synthesis
superposition (mathematics)

ER fluids
USE **electrorheological fluids**

ER-2 aircraft
USE **U-2 aircraft**

ERBE
USE **Earth radiation budget experiment**

erbium
GS chemical elements
. rare earth elements
. . **erbium**
. . . erbium isotopes
metals
. rare earth elements
. . **erbium**
. . . erbium isotopes

erbium 169
USE **erbium isotopes**

erbium 171
USE **erbium isotopes**

erbium alloys
GS alloys
. rare earth alloys
. . **erbium alloys**

erbium compounds
GS rare earth compounds
. **erbium compounds**
RT∞ chemical compounds
∞ metal compounds

erbium isotopes
UF erbium 169
erbium 171
GS chemical elements
. nuclides
. . isotopes
. . . **erbium isotopes**
. rare earth elements
. . **erbium**
. . . **erbium isotopes**
metals
. rare earth elements
. . **erbium**
. . . **erbium isotopes**

erection
USE **construction**

EREP
UF *Earth Resources Experiment Package*
GS packages
. instrument packages
. . **EREP**
RT∞ instruments
Skylab 1
Skylab 2
Skylab 3
Skylab 4

ergodic process
RT information theory
probability theory
stochastic processes
thermodynamics

ergometers
DEF Instruments for measuring muscular work.
GS measuring instruments
. **ergometers**
RT dynamometers

ergonomics
USE **human factors engineering**

ergotamine
GS amines
. **ergotamine**
bases (chemical)
. alkaloids
. . **ergotamine**
drugs
. **ergotamine**
nitrogen compounds
. alkaloids
. . **ergotamine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . alkaloids
. . . . **ergotamine**

EROS (satellites)
UF *Earth Resources Observation Satellites*
GS artificial satellites
. **EROS (satellites)**
RT Earth resources
oceanography
remote sensors
satellite observation
scanning
terrain analysis

EROS asteroid
(added March 1998)
GS celestial bodies
. asteroids
. . **EROS asteroid**
RT Near Earth Asteroid Rendezvous Mission

EROS project
USE Experimental Reflector Orbital Shot Proj

erosion
DEF Progressive loss of original material from a solid surface due to mechanical interaction between that surface and a fluid, a multicomponent fluid, or impinging liquid or solid particles. Used for scars (geology).
UF scars (geology)
GS erosion
. rain erosion
. soil erosion
. water erosion
. wind erosion
RT ablation
abrasion
arroyos
atmospheric effects
cavitation corrosion
cavitation flow
corrosion
degradation
deterioration
erosive burning
etching
fretting
hot corrosion
hydrogeology
impingement
inlets (landforms)
metal surfaces
metal-water reactions
pitting
pollution
rain impact damage
rapids
rivers
soil science
spark machining
surface reactions
tribology
valleys
wave resistance
wear
wear tests
weathering
wind effects

erosive burning
DEF Combustion of solid propellants accompanied with nonsteady, high velocity flows of product gases across burning propellant surfaces.
GS combustion
. erosive burning
RT burnout
combustion temperature
deterioration
erosion
exhaust gases
fuel combustion
hypersonic combustion
ablation
pitting
propellant combustion
smoldering
solid propellant combustion
tribology

error analysis
GS analysis (mathematics)
. numerical analysis
. . error analysis
RT ∞ analyzing
∞ applications of mathematics
bit error rate
boresight error
censored data (mathematics)
fault tolerance
ill-conditioned problems (mathematics)
mean square values
probability theory
range errors
Rayleigh distribution
root-mean-square errors
systematic errors

error band
USE accuracy

error correcting codes
DEF Codes in which each telegraph or data signal conforms to specific rules of construction so that departures from this construction in the received signals can be automatically detected, and permits the automatic correction, at the receiving terminal, of some or all of the errors. Note: Such codes require more signal elements than are necessary to convey the basic information.
GS error correcting codes
. Reed-Solomon codes
RT automatic repeat request
bit error rate
∞ codes
convolutional codes
digital techniques
redundancy encoding

error correcting devices
RT BCH codes
correction
∞ devices
instrument compensation
redundancy encoding

error detection codes
DEF Codes in which each expression conforms to specific rules of construction, so that if certain errors occur in an expression the resulting expression will not conform to the rules of construction and thus the presence of errors is detected. Note: Such codes require more signal elements than are necessary to convey the fundamental information.
RT bit error rate
∞ codes
coding
computer programs
computer systems programs
digital techniques
fault detection
fault tolerance
information theory
parity
proving
quality control
redundancy
redundancy encoding

error functions
GS functions (mathematics)
. error functions
RT statistical distributions

error signals
DEF Voltages the magnitude of which are proportional to the difference between an actual and a desired position.
RT automatic repeat request
bit error rate
compensators
compensators
differential amplifiers
discriminators
errors
false alarms
loop transfer recovery
phase error
position errors
range errors
signal mixing
∞ signals
steering

errors
DEF In mathematics, the difference between the true value and a calculated or observed value. Use for inability.
UF inability
GS errors
. instrument errors
. phase error
. pilot error
. position errors
. . boresight error
. random errors
. range errors
. root-mean-square errors
. systematic errors
. truncation errors
. velocity errors
RT accuracy
bias
∞ compensation
computer program integrity
confidence
consistency
correction
drift (instrumentation)
dynamic characteristics
error signals
hysteresis
linearity
malfunctions
median (statistics)
optical correction procedure
precision
quality control
range (extremes)
reliability
resolution
response bias
∞ scaling
∞ tests
tolerances (mechanics)

ERS 17
GS artificial satellites
. scientific satellites
. . Environmental Research Satellites
. . . ERS 17
RT Atlas Agena launch vehicles

ERS 18
GS artificial satellites
. scientific satellites
. . Environmental Research Satellites
. . . ERS 18
RT Atlas Ai, ena launch vehicles

ERS-1 (ESA satellite)
DEF A European Space Agency remote sensing satellite designed to monitor global oceans, coastal zones and polar regions. It is scheduled for launch on an Ariane 4 expendable launch vehicle in 1990.
GS artificial satellites
. ESA satellites
. . ERS-1 (ESA satellite)

. . maritime satellites
. . . ERS-1 (ESA satellite)
ESA spacecraft
. ESA satellites
. . ERS-1 (ESA satellite)
RT European Space Agency

ERS-2 (sea satellite)
(added February 1995)
GS artificial satellites
. ESA satellites
. . ERS-2 (sea satellite)
ESA spacecraft
. ESA satellites
. . ERS-2 (sea satellite)
RT European Space Agency

ERTS
USE Landsat satellites

ERTS-A
USE Landsat 1

ERTS-B
USE Landsat 2

ERTS-C
USE Landsat 3

ERTS-D
USE Landsat 4

ERTS-E
USE Landsat E

ERTS-F
USE Landsat F

erythrocytes
UF *red blood cells*
GS cells (biology)
. blood cells
. . . erythrocytes
. . . . reticulocytes
RT bone marrow
carboxyhemoglobin
hematocrit
hematocrit ratio
hemoglobin
hemolysis
leukocytes
oxyhemoglobin

ES-3A aircraft
USE S-3 aircraft

ESA
USE European Space Agency

ESA satellites
SN EUROPEAN SPACE AGENCY SATELLITES
UF *ESRO satellites*
European Space Research Organization sat
GS artificial satellites
. ESA satellites
. . Aerosat satellites
. . COS-B satellite
. . ERS-1 (ESA satellite)
. . ERS-2 (sea satellite)
. . ESRO 1 satellite
. . ESRO 2 satellite
. . ESRO 4 satellite
. . European Communications Satellite
. . Exosat satellite
. . GEOS satellites (ESA)
. . HEOS satellites
. . . HEOS A satellite
. . . HEOS B satellite
. . Hipparcos satellite
. . Infrared Space Observatory (ISO)
. . L-Sat
. . Magellan ultraviolet astronomy satellite
. . Marecs maritime satellites
. . Marots (ESA)
. . METEOSAT satellite
. . OTS (ESA)
. . TD satellites
. . . TD-1 satellite
RT Earthnet
European Space Agency
European space programs
International cooperation
SOHO Mission

ESA spacecraft
DEF Spacecraft of the European Space Agency
GS ESA spacecraft
. Columbus space station
. ESA satellites
. . Aerosat satellites
. . COS-B satellite
. . ERS-1 (ESA satellite)
. . ERS-2 (sea satellite)
. . ESRO 1 satellite
. . ESRO 2 satellite
. . ESRO 4 satellite
. . European Communications Satellite
. . Exosat satellite
. . GEOS satellites (ESA)
. . HEOS satellites
. . . HEOS A satellite
. . . HEOS B satellite
. . Hipparcos satellite
. . Infrared Space Observatory (ISO)
. . L-Sat
. . Magellan ultraviolet astronomy satellite
. . Marecs maritime satellites
. . Marots (ESA)
. . METEOSAT satellite
. . OTS (ESA)
. . TD satellites
. . . TD-1 satellite
. Giotto mission
. Hugens probe
RT= spacecraft

Esaki diodes
USE tunnel diodes

escalators
RT elevators (lifts)
ladders
= lifts
stairways

= escape
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Of a particle or larger body: to achieve an escape velocity and a flightpath outward from a primary body so as neither to fall back to the body nor to orbit it.
RT escape (abandonment)
escape capsules
escape rockets
escape systems
escape velocity
leakage

escape (abandonment)
RT bailout
ejection
ejection training
entrapment
= escape
escape rockets
escape systems
jettison systems
jettisoning
parachute descent

escape capsules
GS safety devices
. escape capsules
space capsules
. escape capsules
RT abort apparatus
aborted missions
Assured Crew Return Vehicle
ejection seats
emergency life sustaining systems
= escape
flying ejection seats
high altitude environments
launch escape systems
lunar escape devices
pressure
pressurized cabins
X-38 crew return vehicle

escape rockets
DEF Small rocket engines attached to the leading end of an escape tower, which may be used to provide additional thrust to the capsule to obtain separation of the capsule from the booster vehicle in an emergency.
GS safety devices
. escape rockets
RT abort apparatus
aborted missions
= escape
ejection (abandonment)
launch escape systems
lunar escape devices
= rockets
= spacecraft

escape systems
GS escape systems
. launch escape systems
RT bailout
ejection

ejection seats
= escape
escape (abandonment)
jettison systems
parasone
safety factors
= systems

escape velocity
DEF The radial speed which a particle or larger body must attain in order to escape from the gravitational field of a planet, satellite, or star. Used for parabolic velocity.
UF parabolic velocity
GS rates (per time)
. escape velocity
velocity
. escape velocity
RT = escape
high speed
hyperbolic trajectories
= hypervelocity
orbital velocity
planetary gravitation
Schwarzschild metric
velocity errors

escarpments
DEF Long, more or less continuous cliffs or relatively steep slopes facing in one general direction, breaking the continuity of the land by separating two level or gently sloping surfaces, and produced by erosion or by faulting. Used for scarps.
UF scarps
GS landforms
. escarpments
RT cliffs
slopes
topography

Escherichia
GS microorganisms
bacteria
. . Escherichia

ESG (gyroscope)
USE electrostatic gyroscopes

eskers
USE glacial drift

Eskimos
RT anthropology
culture (social sciences)

ESO (observatory)
USE European Southern Observatory

esophagus
GS anatomy
. digestive system
. . esophagus

ESRO
USE European Space Agency

ESRO 1 satellite
GS artificial satellites
. ESA satellites
. . ESRO 1 satellite
ESA spacecraft
. ESA satellites
. . ESRO 1 satellite
RT European Space Agency
European space programs

ESRO 2 satellite
GS artificial satellites
. ESA satellites
. . ESRO 2 satellite
ESA spacecraft
. ESA satellites
. . ESRO 2 satellite
RT European Space Agency
European space programs

ESRO 4 satellite
GS artificial satellites
. ESA satellites
. . ESRO 4 satellite
ESA spacecraft
. ESA satellites
. . ESRO 4 satellite
RT aurorae
European Space Agency
European space programs
particle density (concentration)
scientific satellites

ESRO satellites
USE ESA satellites

ESSA 1 satellite
UF *OT-3*
GS artificial satellites
. meteorological satellites
. . ESSA satellites
. . . ESSA 1 satellite
RT Delta launch vehicle

ESSA 2 satellite
UF *OT-2*
GS artificial satellites
. meteorological satellites
. . ESSA satellites
. . . ESSA 2 satellite
RT Delta launch vehicle

ESSA 3 satellite
UF *TOS-A*
GS artificial satellites
. meteorological satellites
. . ESSA satellites
. . . ESSA 3 satellite
RT Delta launch vehicle

ESSA 4 satellite
GS artificial satellites
. meteorological satellites
. . ESSA satellites
. . . ESSA 4 satellite
RT Delta launch vehicle

ESSA 5 satellite
GS artificial satellites
. meteorological satellites
. . ESSA satellites
. . . ESSA 5 satellite
RT Delta launch vehicle

ESSA 6 satellite
GS artificial satellites
. meteorological satellites
. . ESSA satellites
. . . ESSA 6 satellite
RT Delta launch vehicle

ESSA 7 satellite
GS artificial satellites
. meteorological satellites
. . ESSA satellites
. . . ESSA 7 satellite
RT Delta launch vehicle

ESSA 8 satellite
GS artificial satellites
. meteorological satellites
. . ESSA satellites
. . . ESSA 8 satellite
RT Delta launch vehicle

ESSA 9 satellite
GS artificial satellites
. meteorological satellites
. . ESSA satellites
. . . ESSA 9 satellite
RT Delta launch vehicle

ESSA satellites
DEF A series of NASA and NOAA satellites launched to monitor the Earth's weather. Those funded by NASA are called TIROS; those funded by NOAA are called ESSA.
GS artificial satellites
. meteorological satellites
. . ESSA satellites
. . . ESSA 1 satellite
. . . ESSA 2 satellite
. . . ESSA 3 satellite
. . . ESSA 4 satellite
. . . ESSA 5 satellite
. . . ESSA 6 satellite
. . . ESSA 7 satellite
. . . ESSA 8 satellite
. . . ESSA 9 satellite
RT cloud photography
Nimbus satellites
satellite observation
TIROS satellites

essentially non-oscillatory schemes
(added September 1990)
UF *ENO schemes*
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . essentially non-oscillatory schemes
RT finite difference theory
hyperbolic differential equations
TVD schemes

esters
GS esters
. acrylates
. alkylates
. aspartates
. Carbamates (trademarks)
. urethanes
. carboxylates
. chloroformate
. cobalt acetates
. cyanurates
. glutamates
. glycerides
. isocyanates
. . diisocyanates
. . fulminates
. lactates
. lead acetates
. mandate
. mercaptomate
. nitrate esters
. . isopropyl nitrate
. . propyl nitrate
. oximates
. organic nitrates
. . cellulose nitrate
. . nitrofurns
. . . hydrazine nitrofurn
. . nitroglycerin
. . PETN
. phthalates
. polycarbonates
. . Lexan (trademark)

. polyesters
. polyethylene terephthalate
. sodium chlorodifluoroacetates
. sodium salicylates
. steroids
. sulfonates
. triacetin
RT acetates
acetyl compounds
citrates
cyanates
lipids
nitroxyls
organic compounds
plasticizers
salicylates
Skydrol (trademark)

estimates
GS estimates
. cost estimates
RT allocations
comparison
confidence limits
contingency
contracts
damage assessment
estimating
evaluation
forecasting
likelihood ratio
management methods
management planning
noise prediction (aircraft)
parameter identification
predictions
production management
project planning
quality control
reliability
reserves
risk
statistical analysis
statistical tests
= statistics
subcontracts
system identification
value

estimating
DEF A procedure for making a statistical inference about the numerical values of one or more unknown population parameters from the observed values in a sample.
GS estimating
. orbital position estimation
. parameter identification
. system identification
RT autoregressive moving average
budgeting
contracts
costs
counting
critical path method
Delphi method (forecasting)
= design
estimates
= estimators
evaluation
feasibility
forecasting
= measurement
mission planning
numerical differentiation
pattern method (forecasting)
probe method (forecasting)
profile method (forecasting)
projects
quality control
reserves
risk
sampling
standard deviation
statistical analysis
statistical tests
= statistics
technological forecasting
value

= estimators
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT correlation
cost estimates
estimating
parameterization
personnel

Estonia
GS nations
. Estonia
RT Baltic sea
Europe

estrogens
GS organic compounds
. lipids
. . steroids
. . . estrogens
secretions
. endocrine secretions
. . hormones
. . . estrogens
RT endocrine glands
sex glands

estuaries
DEF (A) The seaward end or the widened funnel-shaped tidal mouth of a river valley where fresh water comes into contact with seawater and where tidal effects are evident, ley due to the rise of sea level.
UF outlets (geology)
RT bays (topographic features)
Chesapeake Bay (US)
coasts
fisheries
geography
harbors
oceanography
rivers
tidal flats
tides
tributaries

eta-mesons
GS particles
. elementary particles
. . bosons
. . . mesons
. . . . eta-mesons
. . fermions
. . . eta-mesons
. . hadrons
. . . mesons
. . . . eta-mesons
. nuclear particles
. . bosons
. . . mesons
. . . . eta-mesons
RT baryons
charged particles
omega-mesons
rho-mesons
sigma-mesons

etalons
DEF Two adjustable parallel mirrors mounted so that either one may serve as one of the mirrors in a Michelson interferometer; used to measure distance in terms of wavelengths of spectral lines.
GS measuring instruments
. interferometers
. . etalons
. optical measuring instruments
. . etalons
mirrors
. etalons
optical equipment
. optical measuring instruments
. . etalons
RT astronomical interferometry
diffractometers
Fabry-Perot interferometers
fairness
goniometers
optical measurement
photogoniometers
reflectors
Ronchi test
Sagnac effect
specular reflection
telescopes
very long base interferometry

etchants
RT corrosion
etching

etching
GS etching
. plasma etching
RT corrosion
engraving
erosion
etchants
metallography
pitting
ultrasonic cleaning

ethane
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . ethane
RT hydrocarbon fuels

ethane nitrile
USE acetonitrile

ethanol
USE ethyl alcohol

ethers
GS ethers
. acetals
. anisole
. diethyl ether
. gallamine triethiodide
. polyphenyl ether
RT anesthetics
drugs
epoxy compounds
organic compounds
PEEK
propargyl groups

ethics
DEF The standards of conduct and moral judgment of a group, religion, profession, etc.
RT = methodology

norms
research

Ethiopia
GS nations
. Ethiopia
RT Africa

ethnic factors
DEF The complex patterns of behavior which distinguish an ethnic group.
GS sociology
. social factors
. . ethnic factors
RT American Indians
communities
culture (social sciences)
group dynamics
race factors

ethoxy ethylene
GS ethylene compounds
. ethoxy ethylene

ethyl alcohol
UF ethanol
GS hydroxyl compounds
. alcohols
. . ethyl alcohol
RT atmospheric energy sources
carbohydrates

ethyl compounds
RT ... chemical compounds
diethyl compounds
diethyl hydrogen phosphite (DEHP)
tetraethyl orthosilicate
triethyl compounds

ethylene
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkenes
. . . . ethylene
. . . . . vinylidene
RT hydrocarbon fuels
polyethylenes

ethylene compounds
GS ethylene compounds
. chloroethylene
. . trichloroethylene
. ethoxy ethylene
. ethylene dihydrazine
. ethylenediamine
. ethylenediaminetetraacetic acids
RT ... chemical compounds

ethylene dihydrazine
GS ethylene compounds
. ethylene dihydrazine
hydrazines
. ethylene dihydrazine

ethylene oxide
GS epoxy compounds
. ethylene oxide
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . ethylene oxide
RT bactericides
chemical sterilization
decontamination
oxides
spacecraft sterilization

ethylenediamine
GS amines
. diamines
. . ethylenediamine
ethylene compounds
. ethylenediamine

ethylenediaminetetraacetic acids
UF EDTA
GS acids
. carboxylic acids
. . fatty acids
. . . acetic acid
. . . . ethylenediaminetetraacetic acids
ethylene compounds
. ethylenediaminetetraacetic acids
organic compounds
. carboxylic acids
. . fatty acids
. . . acetic acid
. . . . ethylenediaminetetraacetic acids
RT sulfides
detergents

etiology
DEF The doctrine of causes, particularly the causes and reasons for diseases.
RT data libraries
causes
diseases
prevention

ETR (reactors)
USE weighing test reactors

ETS series satellites
USE Weighing Test Satellites

Ettingshausen coolers
USE Ettingshausen effect
thermoelectric cooling

Ettingshausen effect
UF *Ettingshausen coolers*
RT cooling systems
... effects
temperature effects
thermoelectric cooling
thermoelectricity
thermomagnetic cooling
thermomagnetic effects

Euclidean geometry
UF *Euclidean space*
GS geometry
. Euclidean geometry
. . analytic geometry
. . . asterisks
. . . circumferences
. . . conics
. . . . ellipses
. . . . hyperbolas
. . . . parabolas
. . . cyclids
. . . epicyclids
. . . foci
. . . Mercator projection
. . . quadrants
. . . S curves
. . . . Gompertz curves
. . . spheroids
. . . . oblate spheroids
. . . . prolate spheroids
. . . tangents
. . . trusses
. . . trigonometry
. . . angles (geometry)
. . . . angle of attack
. . . . . zero angle of attack
. . . . Bragg angle
. . . . Brewster angle
. . . . dihedral angle
. . . . elevation angle
. . . . look angles (electronics)
. . . . look angles (tracking)
. . . . sweep angle
. . . . . sweptback
. . . . . leading edge sweep
. . Cartesian coordinates
. . circles (geometry)
. . . great circles
. . descriptive geometry
. . lines (geometry)
. . . chords (geometry)
. . . geodesic lines
. . points (mathematics)
. . . fixed points (mathematics)
. . . inflection points
. . polygons
. . . hexagons
. . . tetragons
. . . . parallelograms
. . . . . rhombids
. . . . rectangles
. . . . squares (mathematics)
. . . . trapezoids
. . . triangles
. . polyhedrons
. . . cubes (mathematics)
. . . icosahedrons
. . . octahedrons
. . . parallelopipeds
. . . pyramids
. . . rhombohedrons
. . . tetrahedrons
. . projective geometry
. . . Mercator projection
. . radii
. . . Larmor radius
RT coordinates
curves (geometry)
phase-space integral
polytopes
Riemann manifold
Sobolev space
spheres

Euclidean space
USE Euclidean geometry

euthanasia
GS measuring instruments
. euthanasia
RT gas mixtures
spark ignition

Euglena
GS animals
. protozoa
. . Flagellata
. . . Euglena
microorganisms
. protozoa
. . Flagellata
. . . Euglena
RT algae

eukaryotes
GS cells (biology)
. eukaryotes
RT bacteria
biological evolution
cytology

molecular biology
prokaryotes

Euler buckling
QS buckling
. Euler buckling
RT stress analysis

Euler equations of motion
QS equations of motion
. Euler equations of motion
RT = equations
hydrodynamics
moments of inertia
primitive equations
rigid structures
. upwind schemes (mathematics)

Euler-Cauchy equations
QS analysis (mathematics)
. real variables
. . differential equations
. . . . partial differential equations
. . . . . Euler-Cauchy equations
RT complex variables
conformal mapping
= equations
vector analysis

Euler-Lagrange equation
UF *Lagrange equations of motion*
QS equations of motion
. Euler-Lagrange equation
RT calculus of variations
Castigliano variational theorem
classical mechanics
= equations
extremum values
Lagrangian function

Euler-Lambert equation
RT elliptical orbits
= equations

Eulerian nutation
USE Chandler wobble

Eureca (ESA)
DEF A Space Shuttle launched retrievable autonomous space platform being developed by the European Space Agency. First launch is scheduled for 1991 with first retrieval 6 months later. Used for European Retrievable Carrier.
UF *European Retrievable Carrier*
QS space platforms
. Eureca (ESA)
RT space shuttles

Europa
DEF A satellite of Jupiter orbiting at a mean distance of 671,000 kilometers. Also called Jupiter II.
QS celestial bodies
. natural satellites
. . Io satellites
. . . . Europa
. . Jupiter satellites
. . . . Galilean satellites
. . . . . Europa
RT Charon
Jupiter (planet)

Europa 1 launch vehicle
QS launch vehicles
. Europa launch vehicles
. . Europa 1 launch vehicle

Europa 2 launch vehicle
QS launch vehicles
. Europa launch vehicles
. . Europa 2 launch vehicle
RT COS-B satellite

Europa 3 launch vehicle
QS launch vehicles
. Europa launch vehicles
. . Europa 3 launch vehicle

Europa 4 launch vehicle
QS launch vehicles
. Europa launch vehicles
. . Europa 4 launch vehicle

Europa launch vehicles
QS launch vehicles
. Europa launch vehicles
. . Europa 1 launch vehicle
. . Europa 2 launch vehicle
. . Europa 3 launch vehicle
. . Europa 4 launch vehicle
RT Ariane launch vehicle
Elda launch vehicle
European Space Agency
European space programs
= vehicles

Europe
QS continents
. Europe
. . Central Europe
RT Albania
Alps Mountains (Europe)
Andorra
Armenia
Austria
Azerbaijan
Baltic Shield (Europe)
Belarus
Belgium
Bosnia and Herzegovina
Bulgaria
Carpathian Mountains (Europe)
Commonwealth of Independent States
Croatia
Czech Republic
Czechoslovakia
Denmark
East Germany
England
Estonia
Finland
France
Georgia (Eurasia)
Germany
Gibraltar
Greece
Hungary
Iceland
Italy
Latvia
Liechtenstein
Lithuania
Luxembourg
Middle East
Moldova
Monaco
nations
Netherlands
Northern Ireland
Norway
Poland
Portugal
Romania
Russian Federation
San Marino
Scotland
Serbsia Republic
Slovakia
Spain
Sweden
Switzerland
Turkey
U.S.S.R.
Ukraine
United Kingdom
Vatican City
Wales
West Germany
Yugoslavia

European 1 spacecraft
QS artificial satellites
. European 1 spacecraft
RT Elda launch vehicle

European Airbus
UF Airbus
QS commercial aircraft
. European Airbus
. . A-300 aircraft
. . A-310 aircraft
. . A-320 aircraft
. . A-330 aircraft
. . A-340 aircraft
jet aircraft
. European Airbus
. . A-300 aircraft
. . A-310 aircraft
. . A-320 aircraft
. . A-330 aircraft
. . A-340 aircraft
passenger aircraft
. European Airbus
. . A-300 aircraft
. . A-310 aircraft
. . A-320 aircraft
. . A-330 aircraft
. . A-340 aircraft
transport aircraft
. European Airbus
. . A-300 aircraft
. . A-310 aircraft
. . A-320 aircraft
. . A-330 aircraft
. . A-340 aircraft
RT = aircraft
international cooperation

European Communications Satellite
UF ECS
QS artificial satellites
. communication satellites
. . European Communications Satellite
. ESA satellites
. . European Communications Satellite
ESA spacecraft
. ESA satellites
. . European Communications Satellite
RT European space programs
OTS (ESA)

European Incoherent Scatter Radar
USE EISCAT radar system (Europe)

European Large Telecomm Satellite
USE L-Sat

European Retrievable Carrier
USE Eureca (ESA)

European Southern Observatory
(added June 1988)
DEF An astronomical observatory with several telescopes at La Silla, Chile. It was established by and is jointly operated by Belgium, Denmark, France, Germany, Italy, the Netherlands, Sweden, and Switzerland.
UF *ESO (observatory)*
GS observatories
astronomical observatories
European Southern Observatory
RT Chile
international cooperation

European Space Agency
DEF An international organization acting on behalf of its member states (Belgium, Denmark, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland, and the United Kingdom).
UF *ESA*
ESRO
European Space Research Organization
GS organizations
European Space Agency
RT Ariane launch vehicle
Cassini mission
Elda launch vehicle
ERS-1 (ESA satellite)
ERS-2 (sea satellite)
ESA satellites
ESRO 1 satellite
ESRO 2 satellite
ESRO 4 satellite
Europa launch vehicles
European space programs
EXPOS (Spacelab payload)
Gaussat project
ICL computers
LIRTS (telescope)
Marots (ESA)
METEOSAT satellite
space programs

European space programs
GS programs
space programs
European space programs
Austrian space program
Belgian space program
Czechoslovakian space program
Danish space program
Finnish space program
French space program
German space program
Greek space program
Hungarian space program
Icelandic space program
Italian space program
Luxembourg space program
Netherlands space program
Norwegian space program
Portuguese space program
Russian Space Program
Proton launch vehicle
Spanish space program
Swedish space program
Swiss space program
Turkish space program
U.S.S.R. space program
UK space program
RT Aerosat satellites
AMPTE (satellites)
Ariane 4 launch vehicle
Ariane 5 launch vehicle
Ariane launch vehicle
Astor satellite
Cassini mission
Cluster Mission
Committee on Space Research
COS-B satellite
DIAL satellite
Eurimsat
ETA satellites
LSRO 1 satellite
ESRO 2 satellite
ESRO 4 satellite
Europa launch vehicles
European Communications Satellite
European Space Agency
Exosat satellite
foreign policy
French satellites
GEOS satellites (ESA)
HEOS satellite
Hipparcos satellite
Infrared Space Observatory (ISO)
International Magnetospheric Study
International Satellite Geodesy Experiment
IRIS satellites
man tended free flyers
Marecs maritime satellites
METEOSAT satellite
OTS (ESA)
Quasat
SOHO Mission
space missions
Symphonie satellites

European Space Research Organization
USE European Space Agency

European Space Research Organization sat
USE ESA satellites

europium
GS chemical elements
rare earth elements
europium
europium isotopes
metals
rare earth elements
europium
europium isotopes

europium compounds
GS rare earth compounds
europium compounds
RT xx chemical compounds
xx metal compounds

europium isotopes
GS chemical elements
nuclides
isotopes
europium isotopes
rare earth elements
europium
europium isotopes
metals
rare earth elements
europium
europium isotopes

eustachian tubes
GS anatomy
sense organs
ear
eustachian tubes
RT eardrums
xx tubes

eutectic alloys
GS alloys
eutectic alloys
binary systems (materials)
binary mixtures
eutectics
eutectic alloys
mixtures
binary mixtures
eutectics
eutectic alloys
RT alloying
bismuth alloys
tensile (metallurgy)
superplasticity
whisker composites

eutectic composites
DEF Composite materials with a metal matrix of a mixture of solids including eutectoids.
GS composite materials
metal matrix composites
eutectic composites
RT alloys
directional solidification (crystals)
eutectics
fracture strength
xx materials
metals
mixtures
precipitation hardening

eutectic diagrams
USE phase diagrams

eutectics
GS binary systems (materials)
binary mixtures
eutectics
eutectic alloys
mixtures
binary mixtures
eutectics
eutectic alloys
RT alloying
alloys
eutectic composites
liquid phases
phase diagrams
solid phases
solutions
symetric alloys

eutrophication
DEF The process by which waters become more eutrophic, especially the artificial or natural enrichment of a lake by an influx of nutrients required for the growth of aquatic plants such as algae that are vital for fish and animal life.
RT environment effects
lakes
xx nutrients

EUVE
USE Extreme Ultraviolet Explorer satellite

evaporite
GS minerals
evaporite
RT nodules
nodules
titanates

EVA
USE extravehicular activity

evacuating
SN USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW
RT evacuating (transportation)
evacuating (vacuum)

evacuating (transportation)
SN LIMITED TO CLEARANCE OF PERSONNEL, ANIMALS, OR MATERIAL FROM A GIVEN LOCALITY.
DEF The organized withdrawal or removal of people from a place or area as a protective measure.
RT C-9 aircraft
casualties
civil defense
ejection
elimination
= evacuating
hospitals
mobile quarantine facility
removal
transportation
unloading

evacuating (vacuum)
UF gas evacuating
RT drainage
ejection
elimination
= evacuating
exhausting
gas pockets
purging
removal
suction
vacuum
vacuum pumps
venting
vents

EVAL
USE Earth Viewing Applications Laboratory

evaluation
DEF The process of determining whether an item or activity meets the specified criteria.
GS evaluation
. training evaluation
RT accelerated life tests
acceptability
= analyzing
approach and landing tests (STS)
assessments
certification
= classifying
comparison
computer systems performance
correlation
costs
criteria
crop identification
= discussion
economics
estimates
estimating
examination
feasibility
figure of merit
forecasting
= indication
inspection
management
= measurement
normalizing (stor stock)
observation
= performance
performance prediction
position (title)
proving
quality
ranking
ratings
rejection
reserves
reviewing
selection
statistical correlation
technology assessment
= tests
timber identification
value

evanescence
RT evaporation
surface properties
transpiration

evaporation
DEF The physical process by which a liquid or solid is transformed into the gaseous state; the opposite of condensation.
GS phase transformations
. vaporizing
. . evaporation
. . . evapotranspiration
. . . propellant evaporation
. . . transpiration
RT boiling
concentrating
condensing
dehydration
diffusion
distillation
drying
evanescence
evaporative cooling
evaporography
flashing (vaporizing)
gas-liquid interactions
gas-metal interactions
hydrological cycle
liquid-vapor interfaces
perspiration
reservoirs
respiratory system
= separation
skin (anatomy)
sublimation
volatility
water loss

evaporation rate
DEF The mass of material evaporated per unit time from unit surface of a liquid or solid. The number of molecules of a given substance evaporated per second per square centimeter from the free surface of the condensed phase.
GS rates (per time)
. evaporation rate
RT heat transfer coefficients

evaporative cooling
GS cooling
. evaporative cooling
. . film cooling
. . sweat cooling
RT cooling systems
cryogenic fluid storage
evaporation
propellant evaporation
surface cooling

evaporators
GS heating equipment
. vaporizers
. . evaporators
separators
. evaporators
RT air conditioning equipment
atomizers
concentrators
condensers (liquefiers)
cooling systems
drying apparatus
heat exchangers
refrigerating machinery

evaporography
RT evaporation
images
infrared radiation
photography

evapotranspiration
DEF Loss of water from a land area through transpiration of plants and evaporation from the soil and surface-water bodies. Also, the volume of water lost through evapotranspiration.
GS phase transformations
. vaporizing
. . evaporation
. . . evapotranspiration
RT transpiration
vadose water

evasive actions
GS maneuvers
. evasive actions
RT electronic warfare
obstacle avoidance
tactics
terrain following
warfare

evasive satellites
GS artificial satellites
. evasive satellites
maneuverable spacecraft
. evasive satellites
RT military spacecraft

exaction
USE lunar orbits
orbit perturbation
solar gravitation

even-even nuclei
GS particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . even-even nuclei
corpuscular radiation
. energetic particles
. . nuclei (nuclear physics)
. . . even-even nuclei
RT nuclear structure
odd-even nuclei
odd-odd nuclei

evening
RT daytime
night
sunset

event horizon
(added August 1990)
DEF The smallest radius of observable events around a black hole.
GS horizon
. event horizon
RT black holes (astronomy)
cosmology
gravitation theory
naked singularities
relativity
Schwarzschild metric
white holes (astronomy)

events
GS events
. consecutive events
RT occurrences
probability density functions
probability theory
statistical analysis
statistical distributions
stochastic processes

Everglades (FL)
RT Florida

evoked response (psychophysiology)
RT physiological responses
psychophysiology

<= evolution
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT biogeny
chemical evolution
evolution (development)
evolution (liberation)
existence

evolution (development)
GS evolution (development)
. biological evolution
. . ontogenesis
. chemical evolution
. galactic evolution
. lunar evolution
. planetary evolution
. solar system evolution
. stellar evolution
. . star formation
. . stellar mass accretion
RT <= biology
<= development
<= evolution
extinction
gene expression
genetics
growth
heredity
interstellar extinction
ontogeny
species diffusion

evolution (liberation)
GS evolution (liberation)
. gas evolution
RT boiling
desorption
<= evolution
outgassing
transpiration
vaporizing

EVS
USE enhanced vision

exactness
USE precision

examination
GS examination
. eye examinations
RT acceptability
<= analyzing
characterization
clinical medicine
comparison
optical scanning
detection
diagnosis
<= discussion
evaluation
exploration
inspection
investigation
<= measurement
observation
<= performance
pruning
reviewing
scanning
<= tests
testing evaluation
ultrasonic flaw detection

excavation
DEF The act or process of removing soil and/or rock materials from one location and transporting them to another. It includes digging, blasting, breaking, loading, and hauling, either at the surface or underground. Also, a pit, cavity, hole, or other uncovered cutting produced by excavation or the material dug out in making a channel or cavity. Used for ditching (excavation).
UF ditching (excavation)
GS excavation
. tunneling (excavation)
RT boreholes
construction
<= ditching
drainage
exploration
foundations
lunar excavation equipment
materials handling
mineral deposits
mineral exploration
mining
pits (excavations)
strip mining
underground structures

<= exchangers
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT heat exchangers

exchanging
GS exchanging
. charge exchange
. . resonance charge exchange
. gas exchange
. ion exchanging
. spin exchange
RT <= conversion
deionization
<= expansion
<= shift
transforming

excimer lasers
DEF Molecular lasers using vibronic transitions whose lasing medium is a dimer that exists in the excited state and dissociates in the ground state.
GS stimulated emission devices
. lasers
. . gas lasers
. . . excimer lasers
RT electron pumping
fluorides
halogens
laser deposition
laser outputs
lasing
optical pumping
pulsed laser deposition
<= rare gas compounds
xenon chloride lasers
xenon fluoride lasers

excimers
DEF Molecules characterized by repulsive or very weakly bound ground electronic states.
RT electron orbitals
electron states
electron transitions
intermolecular forces
molecular energy levels
<= rare gas compounds

excitation
DEF Addition of energy to a nuclear, atomic or molecular system, transferring it to another energy state. Used for excited states.
UF excited states
GS excitation
. atomic excitations
. molecular excitation
. photoexcitation
. salt excitation
. wave excitation
. . acoustic excitation
. . harmonic excitation
RT activation
actuation
atomic energy levels
auroral ionization
auroral radiation
electromagnetic absorption
electron states
electron transitions
emission
energy levels
frequency response
ionization
irradiation
laser induced fluorescence
metastable state
radiation trapping
relaxation time
resins
starting
transition probabilities

excited states
USE excitation

exciters
GS elementary excitations
. exciters
RT carrier mobility
electrical insulation
electrons
energy bands
holes (electron deficiencies)
ionic crystals
light (visible radiation)
optical properties
photoelectromagnetic effects

plasmons
positronium
semiconductors (materials)
spectra
Suhl effect

exclusion
RT elimination
isolation
Pauli exclusion principle
rejection
<< separation

excretion
RT ejection
feces
human wastes
perspiration
urine

executive aircraft
USE general aviation aircraft
passenger aircraft

executive systems (computers)
USE operating systems (computers)

exercise
USE physical exercise

exercise physiology
QS physiology
exercise physiology
RT circulatory system
human body
kazoeidon
muscular force
physical fitness
physiochemistry
physiological effects
respiratory physiology
sports medicine
stress (biology)
stress (physiology)

exertion
USE physical work

exhalation
RT alveolar air
expired air
respirometers

exhaust clouds
DEF Clouds formed from the exhaust services of launch vehicle engines and boosters at liftoff. Used for ground clouds and launch clouds.
UF ground clouds
launch clouds
RT aerosols
<< clouds
exhaust gases
launch vehicles
launching
launching sites
rocket exhaust
rocket launching

exhaust diffusers
RT conical nozzles
<< diffusers
ejectors
<< jet nozzles
supersonic diffusers
vaneless diffusers

exhaust emission
DEF The movement of gaseous or other particles and radiation from the nozzle of a rocket or other reaction engine.
QS emission
exhaust emission
RT gas-gas interactions
gas-metal interactions
high temperature gases
infrared radiation
jet exhaust
particle emission
pollution transport
releasing
thermal emission

exhaust flow simulation
QS simulation
exhaust flow simulation
RT flow distribution
mathematical models
wind tunnels

exhaust gases
UF exhaust jets
QS gases
exhaust gases
flue gases
RT air pollution
<< blasts
combustion efficiency
combustion products
diluents
effluents
environment effects
intake burning
exhaust clouds
exhausting
fumes
gas mixtures
gas recovery
infrared suppression
jet blast effects
jet exhaust
nozzle flow
odors
particulates
pollution transport
propulsion
reaction products
rocket exhaust
smog
smoke
smoke abatement
vapors
waste disposal
waste energy utilization
wastes

exhaust jets
USE exhaust gases

exhaust nozzles
QS exhaust nozzles
convergent-divergent nozzles
plug nozzles
spike nozzles
turbine exhaust nozzles
RT air ducts
annular nozzles
base heating
conical nozzles
divergent nozzles
ejectors
<< flow
infrared suppression
inlet nozzles
jet engines
<< jet nozzles
nozzle flow
nozzle inserts
<< nozzles
openings
outlets
rocket engines
slots

exhaust systems
RT afterburning
air conditioning
air pollution
blowers
cleanups
condensers (liquefiers)
cooling systems
ducts
dust collectors
ejectors
elimination
engines
exhausting
fluids
fuel tank pressurization
intake systems
internal combustion engines
manifolds
mufflers
openings
outlets
pipe nozzles
plenum chambers
ports (openings)
rocket exhaust
<< systems
temperature control
ventilation
ventilators
vents
waste disposal

exhaust velocity
DEF The velocity of gases or particles (exhaust stream) that exhaust through the nozzle of a reaction engine, relative to the nozzle.
QS rates (per time)
exhaust velocity
velocity
exhaust velocity
RT acoustic velocity
critical velocity
equation
flow velocity

exhausting
RT blowing
breathing vibration
consumption
decompression
<< discharge
dispersing
disposal
dissipation
ejection
elimination
evacuating (vacuum)
exhaust gases
exhaust systems
ripening
removal
ventilation
venting

exhaustion
RT consumption

depletion
fatigue (biology)
hypothesis

existence
RT cosmology
∞ evolution
life span
validity

existence theorems
GS analysis (mathematics)
real variables
existence theorems
theorems
existence theorems
RT problem solving
roots of equations

exits (doors)
USE doors

exobiology
DEF That field of biology which deals with the effects of extraterrestrial environments on living organisms and with the search for extraterrestrial life. Used for astrobiology and space biology.
UF astrobiology
space biology
RT aerospace environments
Apollo extension system
bioastronautics
∞ biology
carbonaceous meteorites
chemical evolution
environment models
extraterrestrial life
life support systems
lunar environment
Mars Pathfinder
panspermia
planetary environments
spacecraft contamination
spacecraft environments
spacecraft sterilization
terraforming

exophore
USE heterosphere

EXOS satellites
GS artificial satellites
scientific satellites
EXOS satellites
EXOS-A satellite
EXOS-B satellite
EXOS-C satellite
EXOS-D satellite
Japanese spacecraft
EXOS satellites
EXOS-A satellite
EXOS-B satellite
EXOS-C satellite
EXOS-D satellite

EXOS sounding rocket
GS rocket vehicles
multistage rocket vehicles
EXOS sounding rocket
sounding rockets
EXOS sounding rocket
RT Honest John rocket vehicle
Nike-Ajax missile
solid propellant rocket engines
XM-33 engine

EXOS-A satellite
(added February 1992)
UF Kyokko satellite
GS artificial satellites
scientific satellites
EXOS satellites
EXOS-A satellite
Japanese spacecraft
EXOS satellites
EXOS-A satellite

EXOS-B satellite
UF Jikken satellite
GS artificial satellites
scientific satellites
EXOS satellites
EXOS-B satellite
Japanese spacecraft
EXOS satellites
EXOS-B satellite

EXOS-C satellite
UF Ohzora satellite
GS artificial satellites
scientific satellites
EXOS satellites
EXOS-C satellite
Japanese spacecraft
EXOS satellites
EXOS-C satellite

EXOS-D satellite
(added February 1992)
UF Akebono satellite
GS artificial satellites
scientific satellites
EXOS satellites
EXOS-D satellite
Japanese spacecraft
EXOS satellites
EXOS-D satellite

Exosat satellite
UF HELOS (satellite)
High Eccentric Lunar Occultation Satellite
GS artificial satellites
ESA satellites
Exosat satellite
scientific satellites
Exosat satellite
ESA spacecraft
ESA satellites
Exosat satellite
RT eccentric orbits
European space programs
lunar occultation
x ray astronomy
x ray sources

exoskeletons
RT anatomy
arthropods
body composition (biology)
bones
connective tissue
musculoskeletal system

exosphere
SN (ALTITUDES ABOVE APPROXIMATELY 500 KM)
DEF The outermost, or topmost, portion of the atmosphere. Its lower boundary is the critical level of escape, variously estimated at 500 to 1000 kilometers above the Earth's surface.
GS Earth atmosphere
upper atmosphere
exosphere
RT Earth ionosphere
Earth magnetosphere
heterosphere
planetary magnetosphere
radiation belts
thermosphere

exothermic reactions
GS chemical reactions
exothermic reactions
RT association reactions
combustion
combustion chemistry
combustion synthesis
endothermic reactions
incendiary ammunition
pyrolysis
thermal decomposition

expandable structures
GS expandable structures
bellows
inflatable structures
air bag restraint devices
balloons
high altitude balloons
pinsphere balloons
skyhook balloons
superpressure balloons
meteorological balloons
pinsphere balloons
ROBIN balloons
microballoons
tethered balloons
ballutes
gas bags
inflatable gliders
inflatable spacecraft
Beacon satellites
Beacon Explorer A
Explorer 22 satellite
RT expulsion bladders
folding structures
large space structures
orbital assembly
space erectable structures
∞ spacecraft
∞ structures
variable geometry structures

expansion
UF enlarging
GS expansion
gas expansion
Karhunen-Loève expansion
Prandtl-Meyer expansion
series expansion
thermal expansion
RT adiabatic conditions
distortion
elongation
extensions
inflating
deflection
relaxation (mechanics)
swelling
thermal buckling

expansion waves
USE elastic waves

expectancy hypothesis
GS hypotheses
expectancy hypothesis
RT Monte Carlo method
probability density functions
statistical analysis

statistical distributions

expectation
RT contingency
decision theory
forecasting
reliability

expeditions
RT exploration
∞ missions
space flight

expellants
RT cough
∞ discharge
expulsion
flushing

expendable stages (spacecraft)
RT booster recovery
booster rocket engines
engines
multistage rocket vehicles
recoverable spacecraft
reusable spacecraft
rocket engines
space shuttles
stage separation

experience
RT education
qualifications
upgrading

experiment design
SN (LIMITED TO DESIGN OF EXPERIMENTS—EXCLUDES PROTOTYPES)
UF design of experiments
GS **experiment design**
factorial design
RT coverance
degrees of freedom
∞ design
factor analysis
laboratories
mathematical models
operations research
orthogonality
quality control
regression analysis
statistical analysis
systems engineering
variance (statistics)

experimental aircraft
USE **research aircraft**

experimental boiling water reactors
UF *EBWR (reactor)*
GS nuclear reactors
liquid cooled reactors
water cooled reactors
boiling water reactors
experimental boiling water reactors
nuclear research and test reactors
experimental boiling water reactors
water moderated reactors
experimental boiling water reactors

Experimental Breeder Reactor 1
UF *EBR-1 reactor*
GS nuclear reactors
breeder reactors
Experimental Breeder Reactor 1
fast nuclear reactors
Experimental Breeder Reactor 1
liquid cooled reactors
liquid metal cooled reactors
Experimental Breeder Reactor 1
nuclear research and test reactors
Experimental Breeder Reactor 1

Experimental Breeder Reactor 2
UF *EBR-2 reactor*
GS nuclear reactors
breeder reactors
Experimental Breeder Reactor 2
fast nuclear reactors
Experimental Breeder Reactor 2
liquid cooled reactors
liquid metal cooled reactors
Experimental Breeder Reactor 2
nuclear research and test reactors
Experimental Breeder Reactor 2

experimental gas cooled reactors
UF *EGCR (reactor)*
GS nuclear reactors
gas cooled reactors
experimental gas cooled reactors
nuclear research and test reactors
experimental gas cooled reactors

experimental organic cooled reactors
UF *EOCR (reactor)*
GS nuclear reactors
liquid cooled reactors
organic cooled reactors
experimental organic cooled reactors
nuclear research and test reactors
experimental organic cooled reactors
organic moderated reactors
experimental organic cooled reactors

Experimental Reflector Orbital Shot Proj
UF *EROS project*
GS programs
projects
Experimental Reflector Orbital Shot Proj

experimental STOL transport rich airplane
USE **Quasteil aircraft**

experimentation
GS **experimentation**
Physics and Chemistry Experiment in Space
RT critical experiments
exploration
investigation
laboratories
phenomenology
spaceborne experiments

expert systems
(added August 1990)
DEF Computer programs that manipulate symbolic information to produce the same results as human experts would. They deal with uncertain data and make decisions on their own. Input and design relies on human experts. Used for knowledge based systems.
GS information systems
knowledge based systems
expert systems
RT artificial intelligence
belief networks
C (programming language)
computer programming
decision support systems
knowledge bases (artificial intelligence)
knowledge representation
∞ logic
logic programming
natural language processing
pilot support systems
Prolog (programming language)
systems health monitoring

expiration
RT∞ breathing
death
expired air
expulsion
mortality
respiration

expired air
GS gases
gas mixtures
air
expired air
mixtures
solutions
gas mixtures
air
expired air
RT alveolar air
exhalation
expiration
gas composition
metabolic wastes
rebreathing
respiration

exploding conductor circuits
USE **circuits**
exploding wires

exploding conductors
USE **exploding wires**

exploding wires
UF exploding conductor circuits
exploding conductors
GS explosive devices
initiators (explosives)
exploding wires
igniters
initiators (explosives)
exploding wires
wire
exploding wires
RT boosters (explosives)
caps (explosives)
conduction
detonators
electric wire
plasma generators
primers (explosives)
radiation transport
shock waves
wire bridge circuits

exploitation
RT beneficiation
depletion
∞ development
exploration
geology
land use
mines (excavations)
mining
reserves
strip mining

exploration
DEF The search for deposits of useful minerals or fossil fuels; prospecting, including under the oceans. It may include geologic reconnaissance, e.g., remote sensing, photogeology, geophysical and geochemical methods, and both surface and underground investigations. Used for discovering and prospecting.
UF discovering
prospecting
GS exploration
. mineral exploration
. natural gas exploration
. oil exploration
. space exploration
. . lunar exploration
. . Mars exploration
RT boreholes
detection
drilling
examination
excavation
expeditions
experimentation
exploitation
geological surveys
geology
geothermal technology
investigation
mines (excavations)
OSS-1 payload
research
reserves
sampling
space flight
surveys
underground acoustics

Explorer satellites
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Applications Explorer Satellites
. . . Cosmic Background Explorer satellite
. . . Dual Air Density Explorer
. . . Dynamics Explorer satellites
. . . . Dynamics Explorer 1 satellite
. . . . Dynamics Explorer 2 satellite
. . . Explorer 1 satellite
. . . Explorer 2 satellite
. . . Explorer 3 satellite
. . . Explorer 4 satellite
. . . Explorer 5 satellite
. . . Explorer 6 satellite
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. . . Explorer 53 satellite
. . . Explorer 54 satellite
. . . Explorer 55 satellite
. . . Extreme Ultraviolet Explorer satellite
. . . Far UV Spectroscopic Explorer
. . . IMP
. . . International Magnetospheric Explorer
. . . International Sun Earth Explorers
. . . . International Sun Earth Explorer 1
. . . . International Sun Earth Explorer 2
. . . . International Sun Earth Explorer 3
. . . Micrometeoroid Explorer satellite
. . . Radio Astronomy Explorer satellite
. . . Solar Mesosphere Explorer
. . . Uhuru satellite
. . . X Ray Timing Explorer
RT IUE
Juno 1 launch vehicle
Jupiter C rocket vehicle
meteoroid dust clouds
micrometeoroids
outer planets explorers
Scout project
Thor Delta launch vehicle
zodiacal dust

Explorer 1 satellite
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 1 satellite

Explorer 2 satellite
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 2 satellite

Explorer 3 satellite
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 3 satellite

Explorer 4 satellite
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 4 satellite

Explorer 5 satellite
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 5 satellite

Explorer 6 satellite
GS artificial satellites
. geophysical satellites
. . Explorer 6 satellite
. scientific satellites
. . Explorer satellites
. . . Explorer 6 satellite
RT Thor Able rocket vehicle

Explorer 7 satellite
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 7 satellite

Explorer 8 satellite
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 8 satellite

Explorer 9 satellite
GS artificial satellites
. meteorological satellites
. . Explorer 9 satellite
. scientific satellites
. . Explorer satellites
. . . Explorer 9 satellite
RT Scout launch vehicle

Explorer 10 satellite
GS artificial satellites
. geophysical satellites
. . Explorer 10 satellite
. scientific satellites
. . Explorer satellites
. . . Explorer 10 satellite
RT Delta launch vehicle

Explorer 11 satellite
UF *Gamma Ray Astronomy Explorer*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 11 satellite
RT Juno 2 launch vehicle

Explorer 12 satellite
UF *Energetic Particle Explorer A*
EPE-A
S-3 satellite
GS artificial satellites
. geophysical satellites
. . Explorer 12 satellite
. scientific satellites
. . Explorer satellites
. . . Explorer 12 satellite
RT Delta launch vehicle

Explorer 14 satellite
UF *Energetic Particle Explorer B*
EPE-B
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 14 satellite
RT Delta launch vehicle

Explorer 15 satellite
UF *Energetic Particle Explorer C*
EPE-C
GS artificial satellites
. scientific satellites

. . Explorer satellites
. . . Explorer 15 satellite
RT Delta launch vehicle

Explorer 16 satellite
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 16 satellite
RT Scout launch vehicle

Explorer 17 satellite
UF *AE-A satellite*
Atmosphere Explorer A
S-6 satellite
GS artificial satellites
. meteorological satellites
. . Explorer 17 satellite
. scientific satellites
. . Explorer satellites
. . . Explorer 17 satellite
RT Delta launch vehicle

Explorer 18 satellite
UF *IMP-1*
IMP-A
Interplanetary Explorer
S-74 satellite
GS artificial satellites
. lunar satellites
. . Explorer 18 satellite
. scientific satellites
. . Explorer satellites
. . . Explorer 18 satellite
interplanetary spacecraft
. Explorer 18 satellite
lunar spacecraft
. lunar satellites
. . Explorer 18 satellite
unmanned spacecraft
. space probes
. . Explorer 18 satellite
RT Delta launch vehicle

Explorer 19 satellite
UF *AD-A satellite*
Air Density Explorer A
GS artificial satellites
. meteorological satellites
. . Explorer 19 satellite
. scientific satellites
. . Explorer satellites
. . . Explorer 19 satellite
RT Scout launch vehicle

Explorer 20 satellite
UF *Ionosphere Explorer A*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 20 satellite
RT Scout launch vehicle

Explorer 21 satellite
UF *IMP-2*
AD-B
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 21 satellite
RT Delta launch vehicle

Explorer 22 satellite
UF *BE B*
Beacon Explorer B
GS artificial satellites
. navigation satellites
. . Explorer 22 satellite
. passive satellites
. . Beacon satellites
. . . Explorer 22 satellite
. scientific satellites
. . Explorer satellites
. . . Explorer 22 satellite
expandable structures
. inflatable structures
. . inflatable spacecraft
. . . Beacon satellites
. . . . Explorer 22 satellite
inflatable space structures
. inflatable spacecraft
. . Beacon satellites
. . . Explorer 22 satellite
space erectable structures
. inflatable spacecraft
. . Beacon satellites
. . . Explorer 22 satellite
RT Scout launch vehicle

Explorer 23 satellite
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 23 satellite
RT Scout launch vehicle

Explorer 24 satellite
UF *AD1 satellite*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 24 satellite
RT Scout launch vehicle

Explorer 25 satellite
UF *AD1 B*
Air Density Injun Explorer B
Injun Explorer
GS artificial satellites
. injun satellites
. . Explorer 25 satellite
. scientific satellites
. . Explorer satellites
. . . Explorer 25 satellite
RT Scout launch vehicle

Explorer 26 satellite
UF *Energetic Particle Explorer D*
EPE-D
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 26 satellite
RT Delta launch vehicle

Explorer 27 satellite
UF *BE C*
Beacon Explorer C
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 27 satellite
RT Scout launch vehicle

Explorer 28 satellite
UF *IMP-3*
IMP-C
GS artificial satellites
. lunar satellites
. . Explorer 28 satellite
. scientific satellites
. . Explorer satellites
. . . Explorer 28 satellite
lunar spacecraft
. lunar satellites
. . Explorer 28 satellite
RT Delta launch vehicle

Explorer 29 satellite
GS artificial satellites
. geodetic satellites
. . Explorer 29 satellite
. scientific satellites
. . Explorer satellites
. . . Explorer 29 satellite
RT active satellites
ANNA satellites
celestial geodesy
Delta launch vehicle
GEOS 1 satellite
LARGOS satellite
PAGEOS satellite

Explorer 30 satellite
UF *SE-A*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 30 satellite
RT Scout launch vehicle

Explorer 31 satellite
UF *DME-A satellite*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 31 satellite
RT Thor Agena launch vehicle

Explorer 32 satellite
UF *AE-B satellite*
Atmosphere Explorer B
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 32 satellite
RT Delta launch vehicle

Explorer 33 satellite
UF *AIMP-1*
AIMP-D
IMP-D
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 33 satellite
RT Delta launch vehicle

Explorer 34 satellite
UF *IMP-4*
IMP-F
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 34 satellite
RT Thor Agena launch vehicle

Explorer 35 satellite
UF *AIMP-2*
AIMP-E
IMP-E
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Explorer 35 satellite
RT Thor Agena launch vehicle

Explorer 36 satellite
GS artificial satellites
. geodetic satellites
. . Explorer 36 satellite
. scientific satellites
. . Explorer satellites

.... Explorer 38 satellite
RT active satellites
ANNA satellites
celestial geodesy
GEOS 2 satellite
LAGEOS satellite
PAGEOS satellite
Thor Agena launch vehicle

Explorer 37 satellite
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 37 satellite
RT Scout launch vehicle

Explorer 38 satellite
UF *RAE-1*
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 38 satellite
RT Delta launch vehicle

Explorer 39 satellite
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 39 satellite
RT Scout launch vehicle

Explorer 40 satellite
UF *Injun 5 satellite*
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 40 satellite
RT Scout launch vehicle

Explorer 41 satellite
UF *IMP-5*
IMP-G
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 41 satellite

Explorer 42 satellite
USE Uhuru satellite

Explorer 43 satellite
UF *IMP-6*
IMP-I
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 43 satellite
RT Delta launch vehicle

Explorer 44 satellite
DEF The tenth in a series of solar radiation monitoring satellites launched from Wallops Island, VA on July 8, 1971, to measure x rays and ultraviolet radiation from the sun. It was operational until June 3, 1978. Used for Solrad 10 satellite.
UF Solrad 10 satellite
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 44 satellite

Explorer 45 satellite
DEF One in a long series of NASA scientific satellites used to study the atmosphere, ionosphere, magnetosphere, interplanetary space, etc.
GS artificial satellites
. geophysical satellites
.. Explorer 45 satellite
. scientific satellites
.. Explorer satellites
.... Explorer 45 satellite

Explorer 46 satellite
DEF A satellite designed to study meteoroid protective ability of spacecraft launched from Wallops Island, VA on August 13, 1972. Two scientific experiments also on board were to determine the size and the velocity of meteoroids. The velocity experiment failed to work due to excessive heat. Used for Meteoroid Technology Satellite.
UF *Meteoroid Technology Satellite*
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 46 satellite

Explorer 47 satellite
UF *IMP-7*
IMP-H
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 47 satellite

Explorer 48 satellite
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 48 satellite
RT SAS
SAS-2

Explorer 49 satellite
UF *Radio Astronomy Explorer 2*
Radio Astronomy Explorer B
RAE 1
RAE 2
RAE B
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 49 satellite
RT Delta launch vehicle

Explorer 50 satellite
UF *IMP-8*
IMP-J
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 50 satellite

Explorer 51 satellite
UF *AE-C satellite*
Atmosphere Explorer C
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 51 satellite

Explorer 52 satellite
DEF The Hawkeye 1 satellite in the Explorer series. Used for Hawkeye 1 satellite.
UF *Hawkeye 1 satellite*
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 52 satellite

Explorer 53 satellite
GS artificial satellites
. scientific satellites
.. astronomical satellites
... SAS
.... Explorer 53 satellite
. Explorer satellites
.... Explorer 53 satellite
observatories
. astronomical observatories
.. astronomical satellites
... SAS
.... Explorer 53 satellite
RT SAS-3

Explorer 54 satellite
UF *AE-D satellite*
Atmosphere Explorer D
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 54 satellite

Explorer 55 satellite
UF *AE-E satellite*
Atmosphere Explorer E
GS artificial satellites
. scientific satellites
.. Explorer satellites
.... Explorer 55 satellite
RT Delta launch vehicle

explosion suppression
DEF Any method used to confine or suppress an explosion.
RT fire prevention
foams
retardants

explosions
DEF The sudden production of large quantities of gases, usually hot, from much smaller amounts of gases, liquids, or solids.
GS explosions
. aerial explosions
. chemical explosions
.. gas explosions
.. propellant explosions
. nuclear explosions
.. thermonuclear explosions
. underground explosions
. underwater explosions
RT accidents
backfire
blast loads
<< blasts
bursts
combustion
detonation
<< discharge
explosive decompression
explosives
fires
flame propagation
<< flash
flashback
hazards
hydrocarbon combustion
implosions
reactor safety
Riemann waves
safety
shock waves
sound pressure
spontaneous combustion
warning systems

explosive decompression
GS pressure reduction
. explosive decompression
RT explosions
implosions
pressure recovery

pressurized cabins

explosive devices
UF cartridge actuated devices
GS explosive devices
. bombs (ordnance)
. initiators (explosives)
.. boosters (explosives)
.. caps (explosives)
.. detonators
.. exploding wires
.. primers (explosives)
. nuclear devices
. shaped charges
. torpedoes
RT actuators
ammunition
= charging
= devices
explosives detection
igniters
= propellant actuated devices
warheads

explosive forming
GS forming techniques
. cold working
.. explosive forming
metal working
. explosive forming
RT bulging
deep drawing
electrohydraulic forming
extruding
shaped charges

explosive gases
USE flammable gases

explosive welding
GS bonding
. explosive welding
welding
. pressure welding
.. explosive welding
RT cladding
metal bonding
metal joints
metal working
metal-metal bonding

explosives
GS explosives
. BSX
. cellulose nitrate
. dynamite
. HMX
. hydrazine nitrotorm
. hydrogen azides
. nitrazol explosives
. octol (explosive)
. pentolite
. RDX
. styphnates
. TATB
. tetryl
. trinitrotoluene
RT ammonium picrates
ammunition
azides (organic)
bombs (ordnance)
burning rate
case bonded propellants
= charging
chemical explosions
chemical fuels
composite propellants
detonators
double base propellants
double base nickel propellants
explosions
fires
flammable gases
fulminates
gun propellants
guns (ordnance)
hazardous materials
nitroglycerin
nitroguanidine
nitromethane
nuclear weapons
ordnance
PETN
plastic propellants
potassium perchlorates
powder (particles)
propellants
pyrophoric materials
pyrotechnics
shaped charges
sodium azides
TAGN
torpedoes
warheads

explosives detection
(added September 1995)
GS detection
. explosives detection
RT airport security
explosive devices
ion mobility spectroscopy

exponential functions
GS analysis (mathematics)
. complex variables
.. exponential functions
... logarithms
functions (mathematics)
. transcendental functions
.. exponential functions
... logarithms
RT Fourier analysis
hyperbolic functions
orthogonal functions
Poisson density functions
probability density functions
statistical analysis
Weibull density functions

exponents
GS number theory
. exponents
RT arithmetic
fractals
logarithms

exports
USE international trade

EXPOS (Spacelab payload)
DEF X ray spectropolarimetry payload for Spacelab. Used for *X Ray Spectropolarimetry Payload*
UF *X Ray Spectropolarimetry Payload*
GS payloads
. EXPOS (Spacelab payload)
RT European Space Agency
Spacelab

exposure
RT atmospheric effects
bearing (direction)
cost tolerance
dosimeters
radiation
photography
position (location)
positioning
radiation dosage
time
trinitrotoluene
weathering

expressions (mathematics)
USE formulas (mathematics)

expulsion
RT acceleration (physics)
circuit protection
disposal
dumping
ejection
emptying
excretion
exhaust velocity
expellants
expiration
fluid flow
gravity gradient satellites
jettisoning
particle emission
pressurizing
removal
unloading

expulsive bladders
GS diaphragms (mechanics)
. expulsive bladders
RT bellows
ejection
emptying
expandable structures
fuel tank pressurization
fuel tanks
pressurizing
propellant storage
propellant tanks
storage tanks

exters
USE x ray stars

extended duration space flight
USE long duration space flight

extensions
GS extensions
. prolongation
RT accessories
adapters
contracts
decontamination
expansion
filing
filings
insurance (contracts)
revisions
supplements

extensometers
DEF Devices for determining the elongation of a specimen as it is strained. Used for dilatometers.
UF dilatometers
GS measuring instruments
. extensometers
RT deformation
dilatometry
elastometers
mechanical measurement
strain gages
stress measurement
tensometers
thermal expansion

transducers

external combustion engines
GS engines
. external combustion engines
. . Stirling engines
RT automobile engines
boilers
gas turbine engines
internal combustion engines
piston engines

external store separation
UF store release
RT missiles
pods (external stores)
probabilogrammes
= separation
= storage
wing tanks
wing-fuselage stores

external stores
GS external stores
. pods (external stores)
RT missiles
probabilogrammes
= storage
wing tanks
wing-fuselage stores

external surface currents
GS electric current
. external surface currents
RT = currents
electric fields
electromagnetic fields
electromagnetic missiles
electromagnetic pulse
ionization melting
photoelectric emission
spacecraft charging
= surfaces
system generated electromagnetic pulses

external tanks
GS tanks (containers)
. external tanks
RT fuel tanks
nacelles
propellant tanks
Space Shuttle Ascent Stage
storage tanks
wing tanks

externally blown flaps
UF blown flaps
EBF
GS airfoils
. flaps (control surfaces)
. . externally blown flaps
. . . upper surface blown flaps
control surfaces
. flaps (control surfaces)
. . externally blown flaps
. . . upper surface blown flaps
RT blowing
jet flaps
lift
lift devices
powered lift aircraft
short takeoff aircraft
spanwise blowing
wing flaps
wing nacelle configurations

extinction
GS extinction
. interstellar extinction
RT Cenozoic Era
Cretaceous-Tertiary boundary
evolution (development)
extinguishing
fading
fluorescence
laser induced fluorescence
Nemesis (star)

extinguishers
USE fire extinguishers

extinguishing
UF flame quenching
GS extinguishing
. flameout
RT burnout
combustion
extinction
occultation
= quenching
quenching (cooling)

extraction
GS extraction
. geothermal energy extraction
. ion extraction
. solvent extraction
RT brine (process engineering)
beneficiation
centrifuges
centrifuging
columns (process engineering)
concentrating
dialysis
diffusion
dissolving
elution
flotation
furnaces
hydrolysis
leaching
material absorption
material recovery
melting
osmosis
percolation
recycling
refining
removal
= separation
solvents
sorption
washers (cleaners)

extragalactic light
USE extraterrestrial radiation

extragalactic media
USE intergalactic media

extragalactic radio sources
GS celestial bodies
. radio sources (astronomy)
. . extragalactic radio sources
. . . radio galaxies
. . . radio jets (astronomy)
RT BL Lacertae objects
blazars
extraterrestrial radiation
extraterrestrial radio waves
quasars
radiation sources
radio astronomy
radio emission
= sources

extrapolation
RT finite difference theory
forecasting
interpolation
periodic variations
quality control
statistical analysis
= tests
time series analysis
trends

extrasensory perception
UF parapsychology
GS perception
. sensory perception
. . extrasensory perception

extrasolar planets
GS celestial bodies
. planets
. . extrasolar planets
RT gas giant planets
planetary systems

extraterrestrial communication
GS telecommunication
. space communication
. . extraterrestrial communication
RT information dissemination
interplanetary communication
radio telemetry

extraterrestrial environments
GS environments
. extraterrestrial environments
. . cislunar space
. . deep space
. . . interplanetary space
. . . interstellar space
. . Earth orbital environments
. . lunar environment
. . . lunar atmosphere
. . planetary environments
. . . Mars environment
. . . . Mars atmosphere
. . . planetary atmospheres
. . . . helium hydrogen atmospheres
. . . . Jupiter atmosphere
. . . . Mars atmosphere
. . . . Mercury atmosphere
. . . . Neptune atmosphere
. . . . planetary ionospheres
. . . . Pluto atmosphere
. . . . Saturn atmosphere
. . . . Uranus atmosphere
. . . . Venus atmosphere
. . . . . Venus clouds
. . . planetary magnetospheres
. . . planetary magnetosphere
. . satellite atmospheres
. . . lunar atmosphere
. . stellar atmospheres
. . . chromosphere
. . . solar atmosphere
. . . . solar transition region
RT aerospace environments
high gravity environments
long duration space flight
Mars bases
Mercury surface
space exploration
spacecraft environments
Venus surface

extraterrestrial intelligence
DEF Intelligent life existing elsewhere than on Earth.
GS intelligence
. extraterrestrial intelligence
RT interstellar communication
interstellar travel
Project SETI
space communication
unidentified flying objects

extraterrestrial life
DEF Life forms evolved and existing outside the terrestrial biosphere.
GS life sciences
. extraterrestrial life
RT aerospace environments
biosatellites
exobiology
life detectors
panspermia

extraterrestrial matter
GS extraterrestrial matter
. cosmic gases
. . interplanetary gas
. . interstellar gas
. cosmic plasma
. interstellar matter
. . cosmic dust
. . . interplanetary dust
. . . . meteroid dust clouds
. . . . zodiacal dust
. . dark matter
. . interstellar gas
RT cosmochemistry
degenerate matter
matter (physics)
negative matter
Venus fly trap rocket vehicle

extraterrestrial radiation
DEF In general, solar radiation received just outside the Earth's atmosphere. Used for extragalactic light and space radiation.
UF extragalactic light
space radiation
GS extraterrestrial radiation
. extraterrestrial radio waves
. . galactic radio waves
. . . North Polar Spur (astronomy)
. . radio bursts
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. . solar radio emission
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. galactic radiation
. . galactic cosmic rays
. . galactic (UV) waves
. . . North Polar Spur (astronomy)
. . galactic winds
. gamma ray bursts
. gegenschein
. interstellar radiation
. lunar radiation
. planetary radiation
. primary cosmic rays
. . solar cosmic rays
. solar radiation
. . circumsolar radiation
. . . solar corpuscular radiation
. . . . solar electrons
. . . . solar neutrinos
. . . . solar neutrons
. . . . solar protons
. . solar cosmic rays
. . solar radio emission
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. . solar wind
. . solar x-rays
. . sunlight
. stellar radiation
. . stellar winds
. zodiacal light
RT aerospace environments
— aerospace sciences
atmospheric radiation
background radiation
corpuscular radiation
cosmic rays
cosmic x rays
CRRES (satellite)
Earth orbital environments
electromagnetic noise
electromagnetic radiation
electron acceleration
extragalactic radio sources
light (visible radiation)
Lyman alpha radiation
Lyman beta radiation
microwave emission
polarized electromagnetic radiation
polarized radiation
— radiation
radiation belts
radiative transfer
radio jets (astronomy)
radio waves
— rays
relic radiation
synchrotron radiation
system generated electromagnetic pulses
terrestrial radiation
x rays

extraterrestrial radio waves
UF cosmic radio waves
GS electromagnetic radiation
. radio waves
. . extraterrestrial radio waves
. . . galactic radio waves
. . . . North Polar Spur (astronomy)
. . . radio bursts
. . . . solar radio bursts
. . . . . type 2 bursts
. . . . . type 3 bursts
. . . . . type 4 bursts
. . . . . type 5 bursts
. . . solar radio emission
. . . . solar radio bursts
. . . . . type 2 bursts
. . . . . type 3 bursts
. . . . . type 4 bursts
. . . . . type 5 bursts
extraterrestrial radiation
. extraterrestrial radio waves
. . galactic radio waves
. . . North Polar Spur (astronomy)
. . radio bursts
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. . solar radio emission
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
RT centimeter waves
extragalactic radio sources
microwave emission
microwaves
millimeter waves
radio astronomy
radio emission
radio frequency interference
radio jets (astronomy)
radio sources (astronomy)

extraterrestrial resources
GS resources
. extraterrestrial resources
. . lunar resources
RT lunar exploration
planetary bases
space exploration
space logistics

extraterrestrial roving vehicles
USE roving vehicles

extravehicular activity
SN (ACTIVITY OUTSIDE THE SPACECRAFT)
DEF Activities by crew members conducted outside the spacecraft pressure hull or within the cargo bay when the cargo bay doors are open.
UF EVA
RT — activity
AEPS
aerospace environments
Apollo extension system
astronaut locomotion
astronaut maneuvering equipment
extravehicular mobility units
IMLSS
intravehicular activity
man operated propulsion systems
manned maneuvering units
manned space flight
orbital workers
self maneuvering units
space flight
space maintenance
Space Shuttle payloads
umbilical connectors
weightlessness

extravehicular mobility units
SN (LIMITED TO SPACE SUIT UNITS OF THAT NAME DESIGNED FOR THE SPACE TRANSPORTATION SYSTEM)
DEF Independent anthropomorphic space suit systems that provide crew members with environmental protection, life support, mobility, communications, and visibility while performing various extravehicular activities.
GS clothing
. protective clothing
. . pressure suits
. . . space suits
. . . . extravehicular mobility units
. suits
. . pressure suits
. . . space suits
. . . . extravehicular mobility units
RT astronaut locomotion
astronaut maneuvering equipment

extravehicular activity
RMLSS
life support systems
self maneuvering units
space transportation system

extrema
USE range (extremes)

Extreme Ultraviolet Explorer satellite
DEF An Explorer satellite carrying scientific instruments for scanning the sky in the 100-900 Angstrom region of the spectrum to study the very hot celestial bodies (white dwarfs, for example). Used for EUVE.
UF *EUVE*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Extreme Ultraviolet Explorer satellite
RT IUE
ultraviolet astronomy

extreme ultraviolet radiation
DEF Ultraviolet emission in the 100-1000 Angstrom range.
GS electromagnetic radiation
. ultraviolet radiation
. . extreme ultraviolet radiation
RT beams (radiation)
ionizing radiation
Magellan ultraviolet astronomy satellite
∞ radiation
solar radiation

extremely high frequencies
SN (30 TO 300 GHZ)
UF *K band*
KA band
V band
GS frequencies
. radio frequencies
. . microwave frequencies
. . . extremely high frequencies
RT ACTS
millimeter waves

extremely low frequencies
SN (BELOW 300 HZ)
UF ultralow frequencies
GS frequencies
. radio frequencies
. . extremely low frequencies
RT audio frequencies
low frequencies
Seafarer project

extremum values
DEF In statistics, the upper or lower bound of the random variable which is not expected to be exceeded by a specified percentage of the population within a given confidence interval.
GS analysis (mathematics)
. real variables
. . extremum values
. . . limits (mathematics)
. . . maxima
. . . minima
. . . . Cramer-Rao bounds
RT Euler-Lagrange equation
functions (mathematics)
optimization
∞ peaks
probability theory

extroversion
RT behavior
human behavior
psychology

extruding
UF hot extruding
GS forming techniques
. extruding
. . pultrusion
RT casting
cladding
cold working
dies
∞ drawing
explosive forming
injection molding
intrusion
metal spinning
metal working
piercing
pressing (forming)
squeeze casting
wet spinning

eye (anatomy)
GS anatomy
. sense organs
. . eye (anatomy)
. . . choroid membranes
. . . conjunctiva
. . . cornea
. . . oculomotor nerves
. . . pupils
. . . retina
. . . . fovea
RT accommodation
color vision
face (anatomy)
head (anatomy)
lenses
models
nystagmus
ophthalmodynamometry
ophthalmology
optometry
photoreceptors
vestibular nystagmus
vision

eye diseases
GS diseases
. eye diseases
. . asthenopia
. . astigmatism
. . cataracts
. . conjunctivitis
. . glaucoma
. . keratitis
. . phoria
RT blindness
hyperopia
ophthalmology

eye dominance
GS dominance
. eye dominance
RT vision

eye examinations
GS examination
. eye examinations
RT electronystagmography
haploscopes
ophthalmology

eye movements
GS eye movements
. nystagmus
. . vestibular nystagmus
. . . Saccadic eye movements
RT blinking
electronystagmography
head movement
oculometers
rapid eye movement state
visual tasks

eye protection
GS protection
. eye protection
RT flash blindness
goggles
sunglasses
visors

eyeglasses
GS optical equipment
. eyeglasses
RT binoculars
contact lenses
lenses
microscopes
periscopes
reticles
sunglasses
telescopes

Eyring theory
GS kinetic theory
. transport theory
. . Eyring theory
RT equilibrium flow
fluid dynamics
∞ theories

F

F 1 region
- GS Earth atmosphere
  - upper atmosphere
  - Earth ionosphere
    - upper ionosphere
      - F region
        - F 1 region
- regions
  - F region
    - F 1 region

F 2 region
- GS Earth atmosphere
  - upper atmosphere
  - Earth ionosphere
    - upper ionosphere
      - F region
        - F 2 region
- regions
  - F region
    - F 2 region
- RT spread F
  - transequatorial propagation

F centers
- USE color centers

F displays
- USE F region

F layer
- USE F region

F region
- SN (ALTITUDES ABOVE APPROXIMATELY 140 km)
- DEF A portion of the ionosphere extending from about 150 to 1000 km. The F region is subdivided into the F1 (150 to 250 km) and the F2 (250 to 1000 km) regions. The F2 region generally has the largest electron density and it persists throughout the night. The F region is the one most commonly used for long range high frequency propagation.
- UF *F displays*
  - *F layer*
  - *right F layer*
- GS Earth atmosphere
  - upper atmosphere
  - Earth ionosphere
    - upper ionosphere
      - F region
        - F 1 region
        - F 2 region
- regions
  - F region
    - F 1 region
    - F 2 region
- RT plasma bubbles
  - radio transmission

F stars
- GS celestial bodies
  - stars
    - F stars
- RT blue stars
  - dwarf stars
  - G stars
  - giant stars
  - main sequence stars
  - stellar spectra

F-1 rocket engine
- GS engines
  - rocket engines
    - liquid propellant rocket engines
      - F-1 rocket engine
- RT booster rocket engines
  - Nova launch vehicles
  - Saturn launch vehicles

F-2 aircraft
- UF *Hawker Hunter aircraft*
  - *Hunter F-2 aircraft*
- GS attack aircraft
  - fighter aircraft
    - F-2 aircraft
  - Hawker Siddeley aircraft
    - F-2 aircraft
  - jet aircraft
    - F-2 aircraft
  - monoplanes
    - F-2 aircraft
- RT ∞ aircraft

F-4 aircraft
- UF *F-110 aircraft*
  - *F4H aircraft*
  - *Phantom aircraft*
  - *RF-4 aircraft*
- GS attack aircraft
  - fighter aircraft
    - F-4 aircraft
  - jet aircraft
    - F-4 aircraft
  - McDonnell Douglas aircraft
    - Mcdonnell aircraft
      - F-4 aircraft
  - monoplanes
    - F-4 aircraft
  - supersonic aircraft
    - F-4 aircraft
- RT ∞ aircraft
  - J-79 engine

F-5 aircraft
- UF *Freedom Fighter aircraft*
  - *N-156 aircraft*
- GS attack aircraft
  - CCSN aircraft
    - F-5 aircraft
  - fighter aircraft
    - F-5 aircraft
  - jet aircraft
    - turbofan aircraft
      - F-5 aircraft
  - monoplanes
    - F-5 aircraft
  - Northrop aircraft
    - F-5 aircraft
  - supersonic aircraft
    - F-5 aircraft
- RT ∞ aircraft

F-6 aircraft
- UF *Crusader aircraft*
  - *F8U aircraft*
  - *RF-8 aircraft*
- GS attack aircraft
  - fighter aircraft
    - F-8 aircraft
  - jet aircraft
    - F-8 aircraft
  - Ling-Temco-Vought aircraft
    - F-8 aircraft
  - monoplanes
    - F-8 aircraft
  - single engine aircraft
    - F-8 aircraft
  - supersonic aircraft
    - F-8 aircraft
- RT ∞ aircraft

F-9 aircraft
- UF *Cougar aircraft*
  - *F9F aircraft*
  - *Panther aircraft*
- GS attack aircraft
  - fighter aircraft
    - F-9 aircraft
  - Grumman aircraft
    - F-9 aircraft
  - jet aircraft
    - F-9 aircraft
  - monoplanes
    - F-9 aircraft
  - single engine aircraft
    - F-9 aircraft
- RT ∞ aircraft

F-14 aircraft
- GS attack aircraft
  - fighter aircraft
    - F-14 aircraft
  - Grumman aircraft
    - F-14 aircraft
  - jet aircraft
    - F-14 aircraft
  - supersonic aircraft
    - F-14 aircraft
- RT ∞ aircraft

F-15 aircraft
- GS attack aircraft
  - fighter aircraft
    - F-15 aircraft
  - jet aircraft
    - F-15 aircraft
  - supersonic aircraft
    - F-15 aircraft
- RT ∞ aircraft

F-16 aircraft
- UF *YF-16 aircraft*
- GS attack aircraft
  - fighter aircraft
    - F-16 aircraft
  - jet aircraft
    - F-16 aircraft
  - single engine aircraft
    - F-16 aircraft
  - supersonic aircraft
    - F-16 aircraft
- RT ∞ aircraft

F-17 aircraft
- UF *YF-17 aircraft*
- GS attack aircraft
  - fighter aircraft
    - F-17 aircraft
  - jet aircraft
    - F-17 aircraft
  - monoplanes
    - F-17 aircraft
  - supersonic aircraft
    - F-17 aircraft
- RT ∞ aircraft
  - F-18 aircraft

F-18 aircraft
- GS attack aircraft
  - fighter aircraft
    - F-18 aircraft
  - jet aircraft

. F-16 aircraft
McDonnell Douglas aircraft
. F-16 aircraft
Northrop aircraft
. F-16 aircraft
RT ∞ aircraft
. F-17 aircraft

F-20 aircraft
GS attack aircraft
. fighter aircraft
. . F-20 aircraft
jet aircraft
. F-20 aircraft
Northrop aircraft
. F-20 aircraft

F-22 aircraft
(added August 1983)
UF *advanced tactical fighter*
ATF
YF-22 aircraft
GS attack aircraft
. fighter aircraft
. . F-22 aircraft
jet aircraft
. F-22 aircraft
supersonic aircraft
. F-22 aircraft
RT ∞ aircraft

F-27 aircraft
UF *Fokker F 27 aircraft*
Fokker Friendship aircraft
GS Fokker aircraft
. F-27 aircraft
jet aircraft
. turboprop aircraft
. . F-27 aircraft
monoplanes
. F-27 aircraft
passenger aircraft
. F-27 aircraft
transport aircraft
. F-27 aircraft
RT ∞ aircraft

F-28 helicopter
GS light aircraft
. F-28 helicopter
passenger aircraft
. F-28 helicopter
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . rigid rotor helicopters
. . . . F-28 helicopter

F-28 transport aircraft
UF *Fokkership aircraft*
Fokker F 28 aircraft
GS commercial aircraft
. F-28 transport aircraft
Fokker aircraft
. F-28 transport aircraft
jet aircraft
. turbofan aircraft
. . F-28 transport aircraft
monoplanes
. F-28 transport aircraft
passenger aircraft
. F-28 transport aircraft
transport aircraft
. F-28 transport aircraft
RT ∞ aircraft

F-80 aircraft
USE T-33 aircraft

F-84 aircraft
GS attack aircraft
. fighter aircraft
. . F-84 aircraft
jet aircraft
. F-84 aircraft
monoplanes
. F-84 aircraft
Republic aircraft
. F-84 aircraft
single engine aircraft
. F-84 aircraft
RT ∞ aircraft

F-86 aircraft
UF Sabre aircraft
GS attack aircraft
. fighter aircraft
. . F-86 aircraft
jet aircraft
. F-86 aircraft
monoplanes
. F-86 aircraft
North American aircraft
. F-86 aircraft
single engine aircraft
. F-86 aircraft
RT ∞ aircraft

F-88 aircraft
GS attack aircraft
. fighter aircraft
. . F-88 aircraft
jet aircraft
. F-88 aircraft
monoplanes
. F-88 aircraft
Northrop aircraft
. F-88 aircraft
RT ∞ aircraft

F-94 aircraft
GS attack aircraft
. fighter aircraft
. . F-94 aircraft
jet aircraft
. F-94 aircraft
Lockheed aircraft
. F-94 aircraft
monoplanes
. F-94 aircraft
single engine aircraft
. F-94 aircraft
RT ∞ aircraft

F-100 aircraft
UF Super Sabre aircraft
GS attack aircraft
. fighter aircraft
. . F-100 aircraft
jet aircraft
. F-100 aircraft
monoplanes
. F-100 aircraft
North American aircraft
. F-100 aircraft
single engine aircraft
. F-100 aircraft
supersonic aircraft
. F-100 aircraft
RT ∞ aircraft

F-101 aircraft
UF *JF 101 aircraft*
Voodoo aircraft
GS attack aircraft
. fighter aircraft
. . F-101 aircraft
jet aircraft
. F-101 aircraft
McDonnell Douglas aircraft
. Mcdonnell aircraft
. . F-101 aircraft
single engine aircraft
. F-101 aircraft
supersonic aircraft
. F-101 aircraft
RT ∞ aircraft

F-102 aircraft
UF Delta Dagger aircraft
YF-102 aircraft
GS attack aircraft
. fighter aircraft
. . F-102 aircraft
General Dynamics aircraft
. F-102 aircraft
jet aircraft
. F-102 aircraft
monoplanes
. F-102 aircraft
single engine aircraft
. F-102 aircraft
supersonic aircraft
. F-102 aircraft
tailless aircraft
. F-102 aircraft
RT ∞ aircraft

F-104 aircraft
UF Canadair CF-104 aircraft
CF-104 aircraft
Starfighter aircraft
GS attack aircraft
. fighter aircraft
. . F-104 aircraft
jet aircraft
. F-104 aircraft
Lockheed aircraft
. F-104 aircraft
monoplanes
. F-104 aircraft
single engine aircraft
. F-104 aircraft
supersonic aircraft
. F-104 aircraft
RT ∞ aircraft

F-105 aircraft
UF Thunderchief aircraft
GS attack aircraft
. fighter aircraft
. . F-105 aircraft
jet aircraft
. F-105 aircraft
monoplanes
. F-105 aircraft
Republic aircraft
. F-105 aircraft
single engine aircraft
. F-105 aircraft
RT ∞ aircraft

F-106 aircraft
UF Delta Dart aircraft
GS attack aircraft
. fighter aircraft
. . F-106 aircraft
General Dynamics aircraft
. F-106 aircraft
jet aircraft
. F-106 aircraft
monoplanes
. F-106 aircraft
single engine aircraft

F-106 aircraft
supersonic aircraft
F-108 aircraft
tailless aircraft
F-108 aircraft
RT ∞ aircraft

F-112 aircraft
USE F-4 aircraft

F-111 aircraft
UF LADV
TFX aircraft
GS attack aircraft
bomber aircraft
F-111 aircraft
General Dynamics aircraft
F-111 aircraft
Grumman aircraft
F-111 aircraft
jet aircraft
turbofan aircraft
F-111 aircraft
supersonic aircraft
F-111 aircraft
RT ∞ aircraft
mission adaptive wings
variable sweep wings

F-117A aircraft
(added April 1991)
GS attack aircraft
fighter aircraft
F-117A aircraft
jet aircraft
F-117A aircraft
RT ∞ aircraft
aircraft detection
bomber aircraft

F4H aircraft
USE F-4 aircraft

F8U aircraft
USE F-8 aircraft

F8F aircraft
USE F-8 aircraft

FAB (programming language)
USE FORTRAN

fabrication
GS fabrication
space manufacturing
RT assemblies
assembling
construction
low gravity manufacturing
manufacturing
production management
resin film infusion
resin transfer molding
squeeze casting

fabrics
UF cloth
GS fabrics
crepe
Dacron (trademark)
felts
Fortisan (trademark)
gauze
linen
parachute fabrics
silk
wool
RT clothing
coatings
cotton
fibers
∞ films
flame retardants
geotechnical fabrics
grids
interlayers
laminates
mesh
mylar
multilayer insulation
reinforcing materials
ribbons
∞ sheets
socks
textiles
weaving
webbing
webs (sheets)
wire cloth
woven composites

Fabry-Perot interferometers
GS measuring instruments
interferometers
Fabry-Perot interferometers
RT etalons
microwave interferometers
plasma diagnostics

Fabry-Perot lasers
USE lasers

Fabry-Perot spectrometers
GS measuring instruments
radiation measuring instruments
Fabry-Perot spectrometers
spectrometers
Fabry-Perot spectrometers
RT actinometers
airglow
auroral spectroscopy
optical equipment
optical measuring instruments

face (anatomy)
GS anatomy
face (anatomy)
chin
forehead
mouth
lips (anatomy)
nose (anatomy)
RT eye (anatomy)
head (anatomy)

face centered cubic lattices
UF FCC lattices
GS crystal lattices
cubic lattices
face centered cubic lattices
RT body centered cubic lattices
close packed lattices
cluster variation method
crystals

facets
USE flat surfaces

∞ facilities
SN USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW
RT airports
electric power plants
ground handling
industrial areas
industrial plants
land use
launching bases
logistics
logistics management
military air facilities
mobile quarantine facility
research facilities
roads
site selection
sites
Solar Cell Calibration Facility
stations
terminal facilities
test facilities
X Ray Astrophysics Facility

facsimile communication
(added September 1982)
UF facsimile transmission
fax
GS telecommunication
communication
facsimile communication
automatic picture transmission
RT interplanetary communication
lunar communication
satellite communication
spacecraft communication
teletypewriter systems
television systems
transoceanic communication
wireless communication

facsimile transmission
USE facsimile communication

factor analysis
GS statistical analysis
factor analysis
RT autoregressive processes
correlation
covariance
degrees of freedom
experiment design
factorization
matrices (mathematics)
orthogonality
regression analysis
statistical tests
variability
variance (statistics)

factorial design
GS experiment design
factorial design
RT ∞ design
mathematical models
statistical analysis

factorials
GS analysis (mathematics)
combinatorial analysis
factorials
RT binomial coefficients
gamma function

factories
USE industrial plants

factorization
DEF Process or instance of factoring
GS factorization
Cholesky factorization
RT algorithms
factor analysis
finite element method
real variables

factors
USE variable

faculae
DEF Large patches of bright material forming a veined network in the vicinity of sunspots. They appear to be more permanent than sunspots and are probably due to elevated clouds of luminous gas. Used for plages (faculae) and solar fac...ae.
UF *plages (faculae)*
solar faculae
GS solar activity
. solar activity
. . faculae
RT ... activity
chromosphere
photosphere
plasmoids
sunspots

Faddeev equations
RT ... equations
particle collisions
scattering amplitude
wave scattering

fading
GS fading
. signal fading
. . selective fading
RT attenuation
bleaching
color
discoloration
electromagnetic absorption
extinction
reception diversity
signal fading rate
wave dispersion

fahrenheit temperature scale
USE temperature scales

fail-safe systems
DEF Systems used to minimize risk in case of malfunction.
RT ... automation
emergencies
fault tolerance
safety devices
safety management
self tests
... systems

failure
GS failure
. burnthrough (failure)
. engine failure
. structural failure
. system failures
RT abortad missions
... breakdown
buckling
burn-in
collapse
corrosion
cracking (fracturing)
cumulative damage
deformation
destruction
deterioration
distortion
downtime
electrical faults
failure analysis
fatigue (materials)
flashover
fractures (materials)
malfunctions
MAx ratio
rupturing
shearing
short circuits
structural strain
temperature inversions
wear

failure analysis
DEF Subsequent to failure, the logical, systematic examination of an item, its construction, application, and documentation to identify the failure mode and determine the failure mechanism and its basic cause.
RT acoustic emission
... analyzing
burn-in
burst tests
failure
fatigue life
fault detection
fault tolerance
flaw pullout
life (durability)
MAx ratio
MTBF
probability density functions
reliability
statistical analysis
trend analysis

failure modes
GS modes
. failure modes
RT buckling
cracks
elastic buckling
fault detection
... mode
mode (statistics)
MTBF
shearing

faint object camera
DEF One of the five components of the first scientific payload of the Hubble Space Telescope. The faint object camera will be used to observe extremely faint astronomical objects with wavelengths between 120 and 700 nm.
GS optical equipment
. cameras
. . faint object camera
photographic equipment
. cameras
. . faint object camera
RT astronomical photography
Hubble Space Telescope
infrared photography
optical measuring instruments
spaceborne astronomy
spaceborne telescopes
ultraviolet photography

faint objects
GS celestial bodies
. faint objects
RT galaxies
stars

fainting
USE syncope

Fairchild military aircraft
USE Fairchild-Hiller aircraft

Fairchild-Hiller aircraft
UF *Fairchild military aircraft*
GS Fairchild-Hiller aircraft
. C-119 aircraft
. C-123 aircraft
. CH-5 helicopter
. CH-25 helicopter
. XC-142 aircraft
RT ... aircraft

Fairey aircraft
GS Fairey aircraft
. FD 2 aircraft
RT ... aircraft

Fairey Delta 2 aircraft
USE FD 2 aircraft

fairings
GS symmetrical bodies
. streamlined bodies
. . fairings
RT aerodynamic configurations
aircraft structures
canopies
coverings
fillets
housings
landing gear
nacelles
nozzles
perforated shells
protectors
protuberances
sheaths
shells (structural forms)
... spinners
streamlining
wing roots

Faith 7
GS manned spacecraft
. Mercury spacecraft
. . Faith 7
reentry vehicles
. recoverable spacecraft
. . Mercury spacecraft
. . . Faith 7
soft landing spacecraft
. Mercury spacecraft
. . Faith 7
space capsules
. Mercury spacecraft
. . Faith 7
RT Mercury MA-2 flight
Mercury MA-9 flight

Falcon missile
GS missiles
. air to air missiles
. . Falcon missile
. antiaircraft missiles
. . Falcon missile
RT M-46 engine
solid propellant rocket engines

Falkner-Skan equation
GS analysis (mathematics)
. real variables
. . differential equations
. . . Falkner-Skan equation
RT Blasius equation
boundary layer separation
... equations
laminar flow
Prandtl-Meyer expansion
wedge flow

falling
RT atmospheric entry
descent trajectories
particle motion
... precipitation

sinking
vertical motion

falling spheres
- GS: symmetrical bodies
  - bodies of revolution
    - spheres
      - falling spheres
- RT: balls
  - drop towers
  - free fall
  - globules
  - raindrops
  - spheroids

fallout
- UF: washout (radioactivity)
- RT: air pollution
  - fission products
  - fission weapons
  - nuclear explosion effect
  - nuclear explosions
  - nuclear meteorology
  - post-blast nuclear radiation
- ~: radiation
  - radiation effects
  - radiation hazards
  - radioactive contaminants
- ~: radioactive debris
  - radioactivity

false alarms
- DEF: In general, the unwanted detection of input noise. In radar, an indication of a detected target even though one does not exist, due to noise or interference levels exceeding the set threshold of detection.
- RT: error signals
  - signal to noise ratios
  - warning systems

fan blades
- DEF: One or more revolving vanes attached to a rotary hub and operated by a motor.
- RT: compressor blades
  - ducted fans
- ~: fans
  - propeller blades
  - rotary wings
  - turbine blades
  - turbomachine blades
  - ventilation fans

fan in wing aircraft
- GS: fan in wing aircraft
  - XV-5 aircraft
- RT: ~: aircraft
  - lift fans
  - research aircraft
  - short takeoff aircraft
  - tilt wing aircraft
  - V/STOL aircraft
  - vertical takeoff aircraft

fanjet devices
- USE: **lift fans**

~ fans
- SN: USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW
- RT: actuator disks
  - air conditioning equipment
  - air ducts
  - antenna radiation patterns
  - blowers
  - compressor rotors
  - compressors
  - ducted fans
  - fan blades
  - propeller fans
  - turbofans
  - ventilation fans
  - wind tunnel drives

fans (landforms)
- DEF: Gently sloping, fan-shaped masses of detritus forming sections of very low sloped cones commonly at places where there is a notable decrease in gradient, specifically, alluvial fans. Also fan-shaped masses of congealed lava that formed on steep slopes by the continual changing direction of flow. Used for bajadas.
- UF: bajadas
- GS: landforms
  - fans (landforms)
- RT: alluvium
  - canyons
  - clays
  - deltas
  - gravels
  - mud
  - sands
  - sediments

far fields
- DEF: (1~ antennas) Those regions of the field of an antenna where the angular field distribution is essentially independent of the distance from a specified point in the antenna region. (2~fiber optics) The regions, far from source, where the diffraction pattern is substantially the same as that at infinity. (mobile communication) The regions of the field of an antenna where the angular field distance is essentially independent of the distance from the antenna. Used for Fraunhofer region.
- UF: Fraunhofer region
- GS: electromagnetic fields
  - far fields
- RT: antenna radiation patterns
  - electromagnetic radiation
  - field theory (physics)
  - Fresnel region
  - laser arrays
  - near fields
  - noise propagation
  - radiant flux density

far infrared radiation
- SN: (30 MICRONS TO ABOUT 1000 MICRONS)
- GS: electromagnetic radiation
  - infrared radiation
    - far infrared radiation
- RT: long wave radiation
  - near infrared radiation
- ~: radiation
  - radio waves
  - short wave radiation
  - submillimeter waves
  - terrestrial radiation

far ultraviolet radiation
- SN: (200 TO 2000 ANGSTROMS)
- UF: vacuum ultraviolet radiation
- GS: electromagnetic radiation
  - ultraviolet radiation
    - far ultraviolet radiation
      - Lyman alpha radiation
      - Lyman beta radiation
- RT: bremsstrahlung
  - Magellan ultraviolet astronomy satellite
  - near ultraviolet radiation
- ~: radiation
  - ultraviolet isoacyclus
  - x rays

Far UV Spectroscopic Explorer
- GS: artificial satellites
  - scientific satellites
    - Explorer sats. fas
      - Far UV Spectroscopic Explorer

Faraday dark space
- RT: gas discharge tubes
  - glow discharges

Faraday effect
- UF: Faraday rotation
- GS: electromagnetic properties
  - Faraday effect
- RT: circulators (phase shift circuits)
- ~: effects
  - Hall generators
  - Kerr magnetooptical effect
  - magneto-optics
  - optical measurement
  - optical properties
  - polarization (waves)
  - polarized electromagnetic radiation
  - rotation

Faraday rotation
- USE: **Faraday effect**

farm crops
- GS: farm crops
  - alfalfa
  - coffee
  - cotton
  - fruits
  - grains (food)
    - barley
    - corn
    - millet
    - oats
    - rice
    - sorghum
    - wheat
  - hay
  - leguminous plants
    - soybeans
  - potatoes
  - spinach
  - sugar beets
  - sugar cane
  - sunflowers
  - tomatoes
- RT: agriculture
  - AgRISTARS project
  - botany
  - crop calendars
  - crop dusting
  - crop growth
  - crop inventories
  - crop vigor
- ~: crops
  - dying
  - Earth resources
  - farmlands
  - frost damage
  - grasses
  - grasslands
  - irrigation
  - Large Area Crop Inventory Experiment
  - locusts
  - orchards
  - planting
  - plants (botany)
  - plowing
  - seeds
  - vineyards

farmlands
- UF: cropland

plowed fields
GS land
farmlands
RT agriculture
agrophysical units
crop growth
crop identification
crop inventories
crop vigor
= crops
Earth resources
farm crops
grasses
grasslands
hay
irrigation
land use
plains
planting
plowing
regional planning
rural areas
rural land use
soil
sugar beets
sugar cane

fast Fourier transformations
UF FFT
GS analysis (mathematics)
functional analysis
integral transformations
Fourier transformation
fast Fourier transformations
functions (mathematics)
Fourier transformation
fast Fourier transformations
transformations (mathematics)
integral transformations
Fourier transformation
fast Fourier transformations
RT codes in coal technology
Walsh function

fast neutrons
DEF Neutrons of energy exceeding some threshold that must be specified (typically 0.1 or MeV), often associated with those neutrons predominately responsible for displacement damage in materials or neutron radiation fields.
GS nuclear radiation
fast neutrons
particles
elementary particles
fermions
neutrons
fast neutrons
neutral particles
neutrons
fast neutrons
RT beryllia
nucleons
thermal neutrons

fast nuclear reactors
GS nuclear reactors
fast nuclear reactors
Experimental Breeder Reactor 1
Experimental Breeder Reactor 2
fast oxide reactors
fast test reactors
gas cooled fast reactors
liquid metal fast breeder reactors
RT Enrico Fermi atomic power plant
nuclear power reactors

fast oxide reactors
GS nuclear reactors
fast nuclear reactors
fast oxide reactors
RT nuclear power reactors

fast test reactors
GS nuclear reactors
fast nuclear reactors
fast test reactors
RT = reactors

fasteners
GS **fasteners**
anchors (fasteners)
bolts
lock bolts
rivets
locks (fasteners)
nuts (fasteners)
pins
rivets
screws
washers (spacers)
zippers
RT adhesives
= bands
= belts
brackets
cables (ropes)
chains
clamps
clips
closures
connectors
couplings
fittings
holders
hooks
inserts
interference fit
joints (junctions)
latches
linkages
locking
lugs
mooring
ribbons
sleeves
spacers
= spikes
splicing
splines
straps
structural members
studs (structural members)
= tapes
unions (connectors)
wire

fasting
RT aerospace medicine
diets
food intake
hypoxia

fat embolisms
GS diseases
fat embolisms
embolisms
fat embolisms
RT pulmonary circulation
blood vessels
cardiovascular system
heart diseases

fatigue (biology)
DEF State of the human organism after exposure to any time of physical or psychological stress (e.g., prior fatigue).
GS **fatigue (biology)**
auditory fatigue
flight fatigue
muscular fatigue
RT alertness
= biology
damage
effort
exhaustion
human factors engineering
hypothermia
messaging
= performance
physical exercise
sleep deprivation
stress (biology)
stress (physiology)
stress (psychology)
workloads (psychophysiology)
work-rest cycle

fatigue (materials)
DEF A weakening or deterioration of metal or other material occurring under load, especially under repeated cyclic, or continued loading. Used for strain fatigue and structural fatigue.
UF strain fatigue
structural fatigue
GS **fatigue (materials)**
acoustic fatigue
bending fatigue
metal fatigue
thermal fatigue
volumetric strain
RT Bauschinger effect
crack closure
crack geometry
crack propagation
cracking (fracturing)
cracks
creep properties
crystal dislocations
cycles
damage
destruction
ductility
= endurance
failure
fractography
fretting
fretting corrosion
hardness
= materials
mechanical properties
notch sensitivity
plastic properties
residual strength
shear properties
shot peening
S-N diagrams
stress concentration
stress cycles
stress ratio
stress relaxation
stress relieving
stresses
structural failure
surface defects
system failures
temperature variations
thermal stresses
vibration

fatigue diagrams
USE **S-N diagrams**

fatigue life
DEF The number of cycles of stress or strain of a specified character that a given specimen sustains before failure of a specified nature occurs.
GS life (durability)
fatigue life
mechanical properties
fatigue life
RT accelerated life tests
blowouts
Coffin-Manson law
combined stress
failure analysis
interference fit
Palmgren-Miner rule
retirement for cause
service life
short cracks
S-N diagrams
stress cycles

fatigue testing machines
RT acoustic emission
∝ machinery
∝ test equipment

fatigue tests
RT bending
Coffin-Manson law
creep tests
destructive tests
fractography
impact testing machines
impact tests
load tests
∝ materials tests
notch strength
notch tests
resonance testing
S-N diagrams
specimen geometry
static tests
stress concentration
stress cycles
stress ratio
tensile tests
testing time
∝ tests
thermal cycling tests
Weibull density functions
weld tests

fats
GS organic compounds
lipids
fats
RT adipose tissues
∝ food
greases
myelin
∝ nutrients
oils
palmitic acid
synthetic food

fatty acids
GS acids
carboxylic acids
fatty acids
acetic acid
ethylenediaminetetraacetic acids
iodoacetic acid
acetylsalicylic acid
benzilic acid
benzoic acid
lipoic acid
oleic acid
palmitic acid
propionic acid
sebacic acid
valeric acid
organic compounds
carboxylic acids
fatty acids
acetic acid
ethylenediaminetetraacetic acids
iodoacetic acid
acetylsalicylic acid
benzilic acid
benzoic acid
lipoic acid
oleic acid
palmitic acid
propionic acid
sebacic acid
valeric acid
RT ∝ aliphatic compounds
castor oil
∝ nutrients

fault detection
(added September 1993)
GS detection
fault detection
RT electronic equipment tests
engine monitoring instruments
error detection codes
failure analysis
failure modes
fault tolerance
maintenance
reliability engineering
system failures
systems health monitoring

fault mechanics
USE **fracture mechanics**

fault tolerance
DEF The capability of systems to function despite one or more critical failures, by use of redundant circuits or functions and/or reconfigurable elements.
RT error analysis
error detection codes
fail-safe systems
failure analysis
fault detection
reliability engineering

fault trees
DEF Acyclic directed graphs used in the analysis or prediction of faults and defects.
GS trees (mathematics)
fault trees
RT graphs (charts)
topology

∝ faults
SN USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW
RT electrical faults
geological faults
landforms
massifs
seamounts
test pattern generators

fauna
USE **animals**

fax
USE **facsimile communication**

fayalite
GS iron compounds
fayalite
minerals
fayalite
silicon compounds
silicates
fayalite

FBFM (modulation)
USE **feedback frequency modulation**

FBL control
USE **fly by light control**

FBM (missiles)
USE **fleet ballistic missiles**

FCC lattices
USE **face centered cubic lattices**

FD 2 aircraft
UF *Fairey Delta 2 aircraft*
GS Fairey aircraft
FD 2 aircraft
jet aircraft
FD 2 aircraft
monoplanes
FD 2 aircraft
research vehicles
research aircraft
FD 2 aircraft
tailless aircraft
FD 2 aircraft
RT ∝ aircraft
delta wings

FDL-5 reentry vehicle
GS lifting bodies
lifting reentry vehicles
FDL-5 reentry vehicle
reentry vehicles
maneuverable reentry bodies
lifting reentry vehicles
FDL-5 reentry vehicle

FDMA
USE **frequency division multiple access**

fear
GS phobias
fear
fear of flying
RT anxiety
emotions
neuroses
panic
psychoses

fear of flying
GS phobias
fear
fear of flying
RT anxiety
emotions
neuroses

feasibility
RT cost analysis
costs
efficiency
estimating
evaluation

feasibility analysis
RT cost analysis
economic factors

management planning
research management
systems analysis
technology assessment

Feather River Basin (CA)
GS landforms
structural basins
river basins
Feather River Basin (CA)
RT California
rivers

feathering
RT propeller blades
propellers

feature extraction
USE pattern recognition

Feature Identification and Location Exper
SN (FEATURE IDENTIFICATION AND LOCATION EXPERIMENT)
RT Earth observations (from space)
image processing
pattern recognition
remote sensing
remote sensors
scene analysis
Space Shuttle payloads

feces
GS wastes
metabolic wastes
human wastes
feces
RT excretion
perspiration
urine

federal budgets
RT allocations
appropriations
∞ budgets
contracts
cost estimates
financial management
government procurement
procurement management

Federal Republic of Germany
USE West Germany

federations
GS organizations
federations
bureaus (organizations)
RT institutions
international cooperation
nations
teams
unionization
United Nations

feed systems
RT cold flow tests
feeding (supplying)
fuel tanks
intake systems
pumps
∞ systems

feedback
DEF The return of a portion of the output of a device to the input; positive feedback adds to the input, negative feedback subtracts from the input. Information such as progress or results, returned to an originating source. In aeronautics, the transmittal of forces initiated by aerodynamic action on control surfaces or rotor blades to the cockpit controls; the forces so transmitted.
GS feedback
biofeedback
sensory feedback
negative feedback
nonlinear feedback
positive feedback
RT compensators
complexity
control theory
cybernetics
electromagnetic interference
emotional factors
oscillations
oscillators
∞ systems
transfer functions

feedback amplifiers
GS amplifiers
feedback amplifiers
RT distributed feedback lasers
nonlinear feedback
operational amplifiers
oscillators
phantastrons
positive feedback
power amplifiers
self oscillation
servoamplifiers
transistor amplifiers
voltage amplifiers

feedback circuits
GS circuits
feedback circuits
RT feedforward control
transfer functions

feedback control
DEF A control system in which the controlled quantity is measured and compared with a standard representing the desired performance. Any deviation from athe standard is fed back into the control system in such a sense that it will reduce the deviation of the controlled quantity from the standard.
UF closed loop systems
GS automatic control
feedback control
cascade control
RT adaptive control
adaptive optics
automatic frequency control
automatic gain control
∞ automation
biofeedback
∞ control
control equipment
control systems design
control theory
distributed feedback lasers
dynamic control
electronic control
H-infinity control
inverse kinematics
Kalman-Schmidt filtering
linear quadratic Gaussian control
linear quadratic regulator
loop transfer functions
loop transfer recovery
machine learning
MIMO (control systems)
model reference adaptive control
multivariable control
negative feedback
nonlinear feedback
observability (systems)
optical control
optimal control
proportional control
robot control
robustness (mathematics)
sampled data systems
servocontrol
servomechanisms
SISO (control systems)
stability augmentation
Terminal Configured Vehicle Program
tracking problem

feedback frequency modulation
UF *FBFM (modulation)*
GS coding
signal encoding
frequency modulation
feedback frequency modulation
modulation
frequency modulation
feedback frequency modulation
RT phase locked systems

feeders
SN (FOR FLUID AND PARTICULATE MATERIALS)
RT conveyors
dispensers
distributors
feeding (supplying)
fuel systems
injectors
intake systems
loading operations
materials handling
mixers

feedforward control
GS automatic control
feedforward control
RT adaptive control
∞ automation
∞ control
control theory
feedback circuits
model reference adaptive control
optimal control

feeding (supplying)
RT feed systems
feeders
injection
input
∞ loading
materials handling

feelings
USE sensory feedback

feet (anatomy)
DEF The lower, pedal extremities of the legs.
GS anatomy
limbs (anatomy)
leg (anatomy)
feet (anatomy)
appendages
leg (anatomy)
feet (anatomy)

feldspars
DEF A group of abundant rock-forming minerals of the family of anhydrous silicates.
GS aluminum compounds
feldspars
minerals
feldspars

silicon compounds
. silicates
. . feldspars
RT andesite
anorthosite
felsite
igneous rocks

Felsenhip aircraft
USE **F-28 transport aircraft**

felsite
DEF A light colored, fine grained igneous rock composed chiefly of quartz or feldspar
GS rocks
. igneous rocks
. . **felsite**
RT feldspars
minerals
quartz

felts
GS fabrics
. **felts**
RT wool

females
UF woman
RT children
gynecology
human beings
males
menstruation
sex
sex factor

femur
GS anatomy
. musculoskeletal system
. . bones
. . . **femur**
RT knee (anatomy)
leg (anatomy)

∞ **fences**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT airfoil fences
fences (barriers)
tracking stations

fences (barriers)
RT ∞ barriers
boundaries
∞ fences
gates (openings)

Fermat principle
DEF The principle which states that the path along which electromagnetic radiation travels between any two points will be that path for which the elapsed time for the travel is a minimum
RT electromagnetic wave transmission
light transmission
multipath transmission
optical thickness
velocity

fermentation
GS chemical reactions
. **fermentation**
metabolism
. enzyme activity
. . **fermentation**
RT bioconversion
butyric acid

Fermi liquids
GS liquids
. cryogenic fluids
. . **Fermi liquids**
RT cryogenics

Fermi surfaces
RT Brillouin zones
cyclotron resonance
energy levels
magnetoresistivity
∞ surfaces
transition probabilities

Fermi-Dirac statistics
DEF The statistics of an assembly of identical half-integer spin particles, such particles have wave functions antisymmetrical with respect to particle interchange and satisfy the Pauli exclusion principle
RT bosons
degenerate matter
fermions
quantum mechanics
quantum statistics
∞ statistics

fermions
GS particles
. elementary particles
. . **fermions**
. . baryons
. . . hyperons
. . . . xi hyperons
. . . omega-mesons
. . . rho-mesons
. . . sigma-mesons
. . . eta-mesons
. . . leptons
. . . . antineutrinos
. . . . electrons
. . . . . conduction electrons
. . . . . free electrons
. . . . . high energy electrons
. . . . . relativistic electron beams
. . . . . hot electrons
. . . . . N electrons
. . . . . negatrons
. . . . . photoelectrons
. . . . . pi-electrons
. . . . . positrons
. . . . . solar electrons
. . . . muons
. . . . neutrinos
. . . . . solar neutrinos
. . . . positrons
. . . meson resonance
. . . X mesons
. . . neutrons
. . . . cold neutrons
. . . . fast neutrons
. . . . photoneutrons
. . . . solar neutrons
. . . . thermal neutrons
. . . protons
. . . . recoil protons
. . . . solar protons
RT Fermi-Dirac statistics
particle decay
Pauli exclusion principle
quantum statistics
supersymmetry

fermium
GS chemical elements
. actinide series
. . transuranium elements
. . . **fermium**
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . **fermium**
. metals
. actinide series
. . transuranium elements
. . . **fermium**

Ferranti Mercury computer
GS data processing equipment
. computers
. . digital computers
. . . **Ferranti Mercury computer**

ferrates
GS iron compounds
. **ferrates**
. . barium ferrates

ferric ions
GS ions
. metal ions
. . **ferric ions**
RT iron

ferrimagnetic materials
GS magnetic materials
. **ferrimagnetic materials**
RT ferromagnetic materials
∞ materials

ferrimagnetism
GS magnetic properties
. **ferrimagnetism**
RT ferrimagnets
magnons

ferrimagnets
GS magnets
. **ferrimagnets**
RT ferrimagnetism
permanent magnets

ferrites
DEF Solid solutions of carbon in alpha-iron
GS iron compounds
. **ferrites**
RT austenite
ferritic stainless steels
gadolinium-gallium garnet
gyrators
iron alloys
magnetic cores
microstructure
pearlite
spinel
steels
yttrium-aluminum garnet
yttrium-iron garnet

ferritic stainless steels
GS alloys
. iron alloys
. . steels
. . . stainless steels
. . . . **ferritic stainless steels**
RT chromium steels
ferrites
heat treatment
magnetic properties
mechanical properties

ferroalloys
USE **iron alloys**

ferrocenes
GS iron com
. ferro

. . alkylferrocene
organometallic compounds
ferrocenes
. . alkylferrocene

ferroelectric materials
(added March 1987)
RT barium titanates
ceramics
ferroelectricity
ferromagnetic materials
lead zirconate titanates
liquid crystals
∞ materials
∞ polymers
thin films

ferroelectricity
GS electrical properties
. ferroelectricity
RT antiferroelectricity
Curie temperature
dielectric properties
ferroelectric materials
microwave switching

ferrofluids
GS liquids
. ferrofluids
magnetic materials
. ferromagnetic materials
. . ferrofluids
RT dispersions
∞ fluids
microparticles
suspending (mixing)
∞ suspensions
working fluids

ferrography
DEF A technique for the isolation and analysis of wear particles in a lubricant.
RT fatigue tests
metallography
wear tests

ferromagnetic films
GS magnetic materials
. ferromagnetic materials
. . ferromagnetic films
thin films
. ferromagnetic films

ferromagnetic materials
GS magnetic materials
. ferromagnetic materials
. . ferrofluids
. . ferromagnetic films
. . magnetite
. . Permalloys (trademark)
RT ferrimagnetic materials
ferroelectric materials
magnets
∞ materials
permanent magnets
yokes

ferromagnetic resonance
GS resonance
. magnetic resonance
. . ferromagnetic resonance
RT magnetic fields
paramagnetic resonance

ferromagnetism
GS magnetic properties
. ferromagnetism
RT antiferromagnetism
Curie temperature
Curie-Weiss law
demagnetism
Ising model
Langevin formula
magnetic cores
magnetic dispersion
magnets
magnons

ferrous metals
GS metals
. ferrous metals
RT alloys
chemical elements
iron
iron isotopes
∞ metallurgy

ferry spacecraft
UF space buses
GS maneuverable spacecraft
. ferry spacecraft
manned spacecraft
. ferry spacecraft
RT Astro vehicle
cargo spacecraft
Columbus space station
MARS (Manned Reusable Spacecraft)
reentry vehicles
rendezvous spacecraft
reusable spacecraft
soft landing spacecraft
space stations

fertility
RT breeding (reproduction)
fertilization
reproduction (biology)
reproductive systems

fertilization
RT birth
fertility
recombination reactions
∞ reproduction
spermatozoa

fertilizers
RT ammonia
ammonium nitrates
ashes
cultivation
planting
urea
vegetation growth

FET (transistors)
USE **field effect transistors**

fetuses
UF fetuses
RT birth
eggs
embryology
embryos
reproduction (biology)
reproductive systems

fever
RT body temperature
hyperthermia
skin temperature (biology)

Feynman diagrams
GS diagrams
. Feynman diagrams
RT electromagnetic interactions
Minkowski space

particle interactions
quantum electrodynamics

FFAR rocket vehicle
USE **Fulbing I . aircraft rocket vehicle**

FFT
USE **fast Fourier transformations**

FGM (materials)
USE **functionally gradient materials**

FH-1100 helicopter
USE **OH-6 helicopter**

Fiat aircraft
GS **Fiat aircraft**
. G-91 aircraft
. G-95/4 aircraft
. G-222 aircraft
RT ∞ aircraft

Fiat G-222 aircraft
USE **G-222 aircraft**

Fiat G-91 aircraft
USE **G-91 aircraft**

Fiat G-95/4 aircraft
USE **G-95/4 aircraft**

fiber bridging
USE **crack bridging**

fiber composites
DEF Structural materials consisting of combinations of metals or alloys or plastics reinforced with one or more types of fibers.
GS composite materials
. **fiber composites**
. . aramid fiber composites
. . braided composites
. . carbon fiber reinforced plastics
. . . carbon-phenolic composites
. . glass fiber reinforced plastics
. . woven composites
RT aluminum boron composites
aluminum graphite composites
aramid fibers
boron fibers
boron reinforced materials
boron-epoxy composites
Bonsic (trademark)
carbon fibers
carbon-carbon composites
ceramic fibers
chemical vapor infiltration
composite wrapping
crack bridging
debonding (materials)
fiber pullout
fiber volume fraction
fiber-matrix interfaces
filament winding
functionally gradient materials
graphite
graphite-epoxy composites
hybrid composites
laminates
matrix materials
metal fibers
metal matrix composites
micelle
polymer matrix composites
pultrusion
reinforced plastics
reinforcing fibers
reinforcing materials
resin transfer molding

sheet molding compounds
stacking sequence (composite materials)
superhybrid materials
three dimensional composites

fiber lasers
(added October 1997)
GS electronic equipment
. solid state devices
. . solid state lasers
. . . **fiber lasers**
stimulated emission devices
. lasers
. . solid state lasers
. . . **fiber lasers**
. . waveguide lasers
. . . **fiber lasers**
RT fiber optics
laser materials
laser pumping
light amplifiers
optical fibers
optical pumping
semiconductor lasers

fiber optics
DEF The technique of transmitting light through long thin, flexible fibers of glass, plastic, or other transparent materials.
RT Cassegrain optics
crystal optics
electron tubes
fiber lasers
fly by light control
geometrical optics
gradient index optics
light transmission
numerical aperture
optical fibers
∞ optics
optoelectronic devices
photonics
physical optics
plastic fibers
Sagnac effect
scintillating fibers
smart structures
velocons

fiber orientation
RT aramid fibers
boron fibers
ceramic fibers
composite materials
dynamic response
epoxy matrix composites
fiber volume fraction
glass fiber reinforced plastics
impact loads
lay-up
mechanical properties
∞ orientation
reinforcing fibers
stacking sequence (composite materials)

fiber pullout
UF fiber release
GS weaving
. **fiber pullout**
RT adhesive bonding
carbon fibers
ceramic matrix composites
composite materials
failure analysis
fiber composites
fibers
interfacial energy
∞ materials tests
metal matrix composites
reinforcing fibers

fiber release
USE **fiber pullout**

fiber strength
GS mechanical properties
. **fiber strength**
RT aramid fibers
bending
boron fibers
ceramic fibers
compressive strength
fiber volume fraction
Hookes law
Poisson ratio
shear strength
∞ strength
tensile strength

fiber volume fraction
(added April 1992)
GS composition (property)
. concentration (composition)
. . **fiber volume fraction**
optics
. **fiber volume fraction**
RT composite materials
fiber composites
fiber orientation
fiber strength
reinforcing fibers

fiber-matrix interfaces
(added July 1994)
GS interfaces
. **fiber-matrix interfaces**
RT composite materials
fiber composites
interfacial energy
matrix materials
reinforcing fibers

fiberboard
USE **boards (paper)**

fiberglass
USE **glass fibers**

fibers
UF fibrous materials
Refrasil (trademark)
GS **fibers**
. cotton fibers
. hair
. linen
. metal fibers
. microfibers
. optical fibers
. . scintillating fibers
. plastic fibers
. reinforcing fibers
. . aramid fibers
. . . Kevlar (trademark)
. . boron fibers
. . carbon fibers
. . silk
. . synthetic fibers
. . . aramid fibers
. . . . Kevlar (trademark)
. . . ceramic fibers
. . . Dacron (trademark)
. . . Fortisan (trademark)
. . . glass fibers
. . . . Nylon (trademark)
. . . rayon
. . . Vycor
. . . wool
RT boron reinforced materials
carbon fiber reinforced plastics
composite materials
cordage
cotton
fabrics
fiber pullout
∞ filaments
glass fiber reinforced plastics
metal matrix composites
netting (materials/structures)
papers
polymeric films
reinforcing materials
slivers
strands
textiles
wet spinning
whiskers (crystals)
yarns

fibers (mathematics)
RT canonical forms
dimensional analysis
function space
group theory
homotopy theory
manifolds (mathematics)
topology

Fibonacci numbers
RT number theory
∞ numbers
set theory

fibrillation
GS heart function
. **fibrillation**
RT heart diseases
muscles
seismocardiography

fibrin
GS biopolymers
. proteins
. . **fibrin**
body fluids
. blood
. . **fibrin**
organic compounds
. proteins
. . **fibrin**
RT blood coagulation
coagulation
fibrinogen
thrombin

fibrinogen
GS biopolymers
. proteins
. . globulins
. . . **fibrinogen**
body fluids
. blood
. . **fibrinogen**
organic compounds
. proteins
. . globulins
. . . **fibrinogen**
RT fibrin
hemostatics
homeostasis
thrombin

fibroblasts
GS cells (biology)
. fibroblasts
RT cytoplasm
tendons
tissues (biology)

fibrosis
GS diseases
. fibrosis
. . cystic fibrosis
RT tissues (biology)

fibrous materials
USE fibers

Fick's equation
RT diffusion
diffusion coefficient
∞ equations
reaction-diffusion equations
Tafel law

fidelity
USE accuracy

fiduciaries
RT economics
finance
management

field aligned currents
(added September 1988)
DEF Electric currents aligned along magnetic fields.
GS electric current
. field aligned currents
. . Birkeland currents
RT astronomy
atmospheric electricity
Earth ionosphere
Earth magnetosphere
geoelectricity
geomagnetic tail
geomagnetism
geophysics
ionospheric currents
lines of force
magnetic field reconnection
plasma currents
telluric currents
upper atmosphere

field army ballistic missiles
GS missiles
. ballistic missiles
. . field army ballistic missiles
RT intermediate range ballistic missiles
short range ballistic missiles

field coils
GS electric coils
. magnetic coils
. . field coils
RT electromagnets
helical coils
magnet coils

field effect transistors
UF cascode MOSFET
FET (transistors)
IGFET
MESFETs
MISFETs
MOSFET
unipolar transistors
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . transistors
. . . . field effect transistors
. . . . . charge flow devices
. . . . . JFET
. . . . . MOSFETS
RT∞ effects
high electron mobility transistors
indium aluminum arsenides
ion implantation
SOI (semiconductors)

field emission
GS emission
. particle emission
. . electron emission
. . . field emission
RT electric fields
electron microscopes
electron microscopy
magnetic fields
scanning electron microscopy
secondary emission
transmission electron microscopy
Zener effect

field intensity meters
SN (EMPLOY THIS TERM WHEN TYPE OF FIELD INVOLVED IS NOT SPECIFIED—OTHERWISE USE A MORE SPECIFIC TERM)
GS measuring instruments
. field intensity meters
RT actinometers
flux density
magnetometers
noise meters

field mode theory
RT cavity resonators
dielectrics
electromagnetic fields
laser modes
optical resonators
propagation modes
∞ theories

field of view
DEF The area or solid angle that can be viewed through or scanned by an optical instrument.
GS viewing
. field of view
RT bearing (direction)
conical scanning
elevation angle
∞ fields
look angles (tracking)
visual fields

field coils
USE magnetic coils

field strength
DEF For any physical field, the flux density, intensity, or gradient of the field at the point in question.
GS field strength
. electric field strength
. magnetic flux
RT acoustic properties
directivity
electric fields
electrical properties
electromagnetic fields
flux density
gravitational fields
isotropy
magnetic diffusion
magnetic fields
magnetic properties
∞ orientation
permittivity
∞ strength

field theory (algebra)
GS field theory (algebra)
. cubic equations
. quadratic equations
RT∞ fields
Green's functions
homeomorphisms
nonlinear equations
∞ theories

field theory (physics)
UF ambif
force fields
stigmonon theory
GS field theory (physics)
. crystal field theory
. gauge theory
. . quantum chromodynamics
. . unified field theory
. . . electroweak model
. . . standard model (particle physics)
. grand unified theory
TT antenna radiation patterns
attraction
boson fields
closure law
crossed fields
Dirac equation
distribution (property)
∞ dynamics
electromagnetic fields
lyr fields
∞ fields
flow distribution
flux (rate)
flux density
function space
geomagnetism
gravitational fields
Green's functions
light-cone expansion
magnetic field inversions
magnetic fields
magnetostatic fields
many body problem
multipolar fields
nuclear physics
null zones
∞ physics
Pomeranchuk theorem
potential fields
pressure distribution
quantum electrodynamics
quantum theory
radiation distribution
relativity
self consistent fields
sound fields
string theory
strong interactions (field theory)
supergravity
supersymmetry
temperature distribution
tensors
∞ theories
traveling charge
weak interactions (field theory)
Yang-Mills fields
Yang-Mills theory

zero point energy

~ fields
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT boson fields
electric fields
field of view
field theory (algebra)
field theory (physics)
gravitational fields
magnetic fields
military air facilities
self consistent fields
visual fields

fighter aircraft
UF *Interceptor aircraft*
GS attack aircraft
. **fighter aircraft**
. . Alpha jet aircraft
. . EH 112 aircraft
. . F-2 aircraft
. . F-4 aircraft
. . F-5 aircraft
. . F-8 aircraft
. . F-9 aircraft
. . F-14 aircraft
. . F-15 aircraft
. . F-16 aircraft
. . F-17 aircraft
. . F-18 aircraft
. . F-20 aircraft
. . F-22 aircraft
. . F-84 aircraft
. . F-86 aircraft
. . F-89 aircraft
. . F-94 aircraft
. . F-100 aircraft
. . F-101 aircraft
. . F-102 aircraft
. . F-104 aircraft
. . F-105 aircraft
. . F-106 aircraft
. . F-117A aircraft
. . FV-12A aircraft
. . G-91 aircraft
. . G-95/4 aircraft
. . GA-5 aircraft
. . Harrier aircraft
. . Jaguar aircraft
. . JAS-39 aircraft
. . jet provost aircraft
. . MiG aircraft
. . Mirage aircraft
. . . Mirage 3 aircraft
. . P-51 aircraft
. . P-1127 aircraft
. . P-1154 aircraft
. . Saab 37 aircraft
. . Sonitar aircraft
. . Vampire MK 35 aircraft
. . YF-12 aircraft
RT ~ aircraft
highly maneuverable aircraft
~ interceptors
jet aircraft
~ military aircraft
~ military aviation
MRCA aircraft
single engine aircraft
STOVL aircraft
supersonic aircraft
training aircraft
V/STOL aircraft
X-31 aircraft

figure of merit
RT acceptability
~ analyzing
criteria
efficiency
evaluation
modulation transfer function
optical transfer function
~ performance
Q factors
quality
selection
value

filament winding
UF *filament wound construction*
GS winding
. **filament winding**
RT ceramic fibers
composite wrapping
fiber composites
helenoid structures
laminates
metal fibers
netting (materials/structures)
preimpregnation

filament wound construction
USE **filament winding**

~ filaments
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT boron fibers
carbon fibers
cathodes
ceramic fibers
cordage
fibers
ionizers
reinforcing materials
resistors
strands
vortex filaments
wet spinning
whiskers (crystals)
wire

filaments (solar physics)
USE **solar prominences**

file maintenance (computers)
GS maintenance
. **file maintenance (computers)**
RT checkout
computer programming
computers
program verification (computers)
programmers
~ programming

~ files
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT document storage
files (tools)

files (tools)
GS tools
. **files (tools)**
RT abrasion
~ files
scrapers

fillers
RT additives
~ cells
dopes
opacifiers
paints
pigments
primers (coatings)
reinforcement (structures)
resins
sealers
sizing materials
varnishes

fillets
RT facings
joints (junctions)
seams (joints)
welding

filling
GS filling
. **refilling**
RT accumulations
~ charging
extensions
injection
input
~ loading
replenishment
supplying

film boiling
GS phase transformations
. vaporizing
. . boiling
. . . **film boiling**
RT heat transfer
Leidenfrost phenomenon
nucleate boiling

film condensation
GS condensing
. **film condensation**
RT condensers (liquefiers)
cooling
heat transfer

film cooling
DEF The cooling of a body or surface, such as the inner surface of a rocket combustion chamber, by maintaining a thin fluid layer over the affected area.
GS cooling
. evaporative cooling
. . film cooling
. liquid cooling
. . **film cooling**
RT liquid injection
surface cooling
sweat cooling

film thickness
GS dimensions
. **film thickness**
RT ellipsometry
thickness

~ films
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT coatings
corrosion prevention
electrode film barriers
fabrics
fluid films
helium film
Kapton (trademark)
laminates
Langmuir-Blodgett films
magnetic films
membranes

metal films
monomolecular films
oxide films
papers
photographic film
polymeric films
semiconducting films
silicon films
squeeze films
superconducting films
thermoplastic films
thick films
thin films
video tapes
webs (sheets)

filter wheel infrared spectrometers
GS measuring instruments
. optical measuring instruments
. . infrared spectrometers
. . . **filter wheel infrared spectrometers**
. radiation measuring instruments
. . actinometers
. . . infrared spectrometers
. . . . **filter wheel infrared spectrometers**
. . infrared instruments
. . . infrared spectrometers
. . . . **filter wheel infrared spectrometers**
. spectrometers
. . infrared spectrometers
. . . **filter wheel infrared spectrometers**
optical equipment
. optical measuring instruments
. . infrared spectrometers
. . . **filter wheel infrared spectrometers**
RT Ebert spectrometers
∞ filters
infrared spectrophotometers
solar spectrometers

filtergrams
RT optical filters
solar instruments
solar physics
solar spectra

filtering
USE **filtration**

∞ filters
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT absorbers (materials)
adaptive filters
air filters
attenuation
bandpass filters
bandstop filters
birefringent filters
crystal filters
digital filters
electric filters
electromagnetic wave filters
electronic filters
filter wheel infrared spectrometers
FIR filters
fluid filters
high pass filters
magic filters
Kalman filters
linear filters
low pass filters
matched filters
monochromatic radiation
nonlinear filters
optical filters
radar filters
radio filters
reduced order filters
separators
spatial filtering
tunable filters

filtration
UF filtering
GS filtration
. spatial filtering
RT activated carbon
beds (process engineering)
beneficiation
concentrating
∞ concentration
concentrators
effluents
erosion
fluid flow
hydrometallurgy
materials recovery
percolation
precipitation (chemistry)
∞ screening
∞ separation
sewage treatment
size separation
water treatment

finance
RT accounting
commerce
fiduciaries
gross national product
investments
management planning
marketing
risk
wage surveys

financial management
GS management
. **financial management**
RT aircraft production costs
allocations
budgeting
cost analysis
cost estimates
costs
economy
federal budgets
launch costs
life cycle costs
procurement management

∞ fine
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT fine structure
fineness
fineness ratio
fines

fine structure
UF multiplets
RT alpha decay
atomic structure
∞ fine
hyperfine structure
line spectra
spectral energy distribution
∞ structures

fineness
RT coarseness
∞ fine
fineness ratio
particle size distribution
purity
quality
size (dimensions)
textures

fineness ratio
DEF The ratio of the length of a body to its maximum diameter, or, sometimes to some equivalent dimension — said especially of a body such as an airship hull or rocket.
GS ratios
. **fineness ratio**
RT aspect ratio
dimensions
∞ fine
fineness
oblate spheroids
slender bodies
thickness ratio

fines
GS particles
. powder (particles)
. . **fines**
RT ∞ fine
∞ flour
fractions
particle size distribution
∞ screening

fingers
GS anatomy
. limbs (anatomy)
. . hand (anatomy)
. . . **fingers**
appendages
. hand (anatomy)
. . **fingers**
RT sense organs

fingers (robotics)
USE **end effectors**

finishes
GS **finishes**
. enamels
. glazes
. lacquers
RT ceramic coatings
coatings
corrosion
dopes
impregnating
luster
machining
metallurgy
paints
plating
polishing
primers (coatings)
protective coatings
sizing (surface treatment)
sprayed coatings
surface finishing
surface properties
varnishes
veneers
waxes

finite difference theory
GS analysis (mathematics)
. numerical analysis
. . approximation

. . . **finite difference theory**
RT Crank-Nicholson method
difference equations
differences
essentially non-oscillatory schemes
extrapolation
flux difference splitting
flux vector splitting
grid generation (mathematics)
interpolation
multigrid methods
significance
∞ theories
time marching
TVD schemes
upwind schemes (mathematics)
vortex in cell technique

finite element method
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **finite element method**
procedures
. **finite element method**
RT ∞ applications of mathematics
boundary value problems
Cholesky factorization
computational fluid dynamics
conjugates
Crank-Nicholson method
factorization
fracture mechanics
grid generation (mathematics)
isoparametric finite elements
iterative solution
matrices (mathematics)
∞ methodology
minimal surfaces
multigrid methods
NASTRAN
panel method (fluid dynamics)
patch tests
shape functions
solid mechanics
unstructured grids (mathematics)

finite impulse response filters
USE **FIR filters**

finite volume method
DEF A moving mesh method for analyzing transonic flow over airfoils.
GS analysis (mathematics)
. numerical analysis
. . **finite volume method**
procedures
. **finite volume method**
RT boundary value problems
∞ methodology
TVD schemes
unstructured grids (mathematics)

finite-state machines
USE **Turing machines**

Finland
GS nations
. **Finland**
RT Europe
Finnish space program
Scandinavia

finned bodies
RT aerodynamic configurations
∞ bodies
bodies of revolution
cooling fins
fins
heat exchangers
missile bodies
nose fins
projectiles
symmetrical bodies

Finnish space program
(added November 1988)
GS programs
. space programs
. . European space programs
. . . **Finnish space program**
RT Finland

fins
DEF Fixed or adjustable airfoils or vanes attached longitudinally to an aircraft, rocket, or a similar body to provide a stabilizing effect. Also, a flat plate of structure, as a cooling fin. Used for vertical fins.
UF *vertical fins*
GS **fins**
. cooling fins
. nose fins
RT aerial rudders
airfoils
airframes
∞ blades
control surfaces
finned bodies
hydrofoils
missile components
rudders
tails
stabilizers (fluid dynamics)
tail assemblies
vanes
winglets

fiords
DEF Arms of the sea having steep sides, deep bottoms, and shallow sills separating them from the sea.
GS landforms
. **fiords**
RT cliffs
geology
inlets (topography)
Norway
oceanography
water

FIR filters
DEF Physically unrealizable nonrecursive digital filters. Used for finite impulse response filters.
UF finite impulse response filters
GS electromagnetic wave filters
electric filters
. digital filters
. . **FIR filters**
RT bandpass filters
electronic filters
∞ filters
microwave filters
radar filters
recursive functions

FIRE (climatology)
(added August 1991)
UF *First ISCCP Regional Experiment*
GS programs
. projects
. . **FIRE (climatology)**
RT climatology
cloud cover
clouds (meteorology)
remote sensing
satellite observation

fire control
SN (LIMITED TO CONTROL OF THE FIRING OF WEAPONS—EXCLUDES FIRE PREVENTION AND FIRE FIGHTING)
RT bombing equipment
∞ control
firing (ignition)
gunfire
gunnery training
range finders
weapon systems
weapons

fire control circuits
GS circuits
. **fire control circuits**
RT ∞ control

fire damage
GS damage
. **fire damage**
RT ashes
charring
combustion
fires
flames
fumes
smoke
soot

fire extinguishers
UF *chemical extinguishers*
extinguishers
RT fire fighting
fire prevention
firebreaks
fires
flammability
foams

fire fighting
SN (EXCLUDES FIRE CONTROL—CONTROL OF THE FIRING OF WEAPONS)
RT breathing apparatus
fire extinguishers
fire prevention
firebreaks
fires
flammability
foams

fire point
RT flammability
flash point
spontaneous combustion

fire prevention
SN (EXCLUDES FIRE CONTROL—CONTROL OF THE FIRING OF WEAPONS)
GS prevention
. **fire prevention**
RT accident prevention
explosion suppression
fire extinguishers
fire fighting
firebreaks
fireproofing
fires
flame retardants
forest fires
high pressure oxygen
safety
safety devices
safety management
smoke detectors
spontaneous combustion
warning

warning systems

fire resistance
USE flammability

fire retardants
USE flame retardants

-- firetrucks
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bulldozers
nuclear explosions

Firebee 2 target drone aircraft
GS drone vehicles
. drone aircraft
. . target drone aircraft
. . . Firebee 2 target drone aircraft
light aircraft
. Firebee 2 target drone aircraft
pilotless aircraft
. drone aircraft
. . target drone aircraft
. . . Firebee 2 target drone aircraft
research vehicles
. research aircraft
. . Firebee 2 target drone aircraft
Ryan aircraft
. Firebee 2 target drone aircraft
supersonic aircraft
. Firebee 2 target drone aircraft
RT -- aircraft
-- military aircraft
targets
-- winged vehicles

firebrands
RT clearings (openings)
combustion
conservation
fire extinguishers
fire fighting
fire prevention
fires
flames
forest fires
forests

fireflies
DEF Flying insects which produce light by bioluminescence.
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . fireflies

fireproofing
RT fire prevention
nonflammable materials
safety

fires
GS fires
. forest fires
RT accidents
backfire
burns (injuries)
combustion
control surfaces
deflagration
explosions
explosives
fire damage
Fire extinguishers
fire fighting
fire prevention
firebrands
firing (igniting)
flames
flashback
hazards
safety
Saint Elmo fire
smoldering
warning systems

fireworks
USE pyrotechnics

firing (igniting)
GS firing (igniting)
. rocket firing
. . retrofiring
. . test firing
. . . static firing
RT burning time
detonable gas mixtures
detonation
drying
fire control
fires
flammable gases
guides
ignition
pulsejet engines
starting

firing time
USE burning time

firmware
DEF Hardwired software which often encompasses microcodes.
RT computer components
computer programming
hardware
microprocessors
microprogramming
RISC processors

first aid
RT accidents
chemical defense
cures
disasters
kits
medical equipment
medical science
medical services
resuscitation
splints
stretchers
tourniquets
ventilation

First ISCCP Regional Experiment
USE FIRE (climatology)

Fischer-Tropsch process
RT catalysis
catalytic activity
reaction kinetics
synthesis (chemistry)
synthetic fuels

fish
USE fishes

Fishbowl Operation
RT high altitude tests
nuclear explosions
-- operations
Vela satellites

fisheries
DEF Plans for harvesting fish or other aquatic life, especially in sea waters.
RT aquaculture
estuaries
fishes
fishing
marine biology
marine resources
sea water
shallow water
total fish
wetlands

fishes
UF fish
GS animals
. vertebrates
. . fishes
. . . . sharks (fish)
. . . . sharks
RT aquaculture
Earth resources
fisheries
fishing
-- food
ichthyology
-- nutrients
pollutabarrels
red tide
aquarea
wildlife

fishing
(Added November 1982)
RT fisheries
fishes
industries
schools (fish)

fishmilling
USE yaw

fissile fuels
GS fuels
. fissile fuels
RT gaseous fission reactors
nuclear fuels
nuclear reactors
radioactive materials

fissile materials
USE fissionable materials

fission
DEF The splitting of an atomic nucleus into two more-or-less equal fragments.
RT blankets (fission reactors)
fuel production
nuclear fuels
splitting

fission electric cells
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . space power reactors
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
nuclear electric power generation

. . nuclear auxiliary power units
. . . SNAP
. . . . Rankin electric cells
. . . . . SNAP 2
. . . . . SNAP 4
. . . . . SNAP 8
. . . . . SNAP 10A
. . space power reactors
. . . Rankin electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. nuclear power reactors
. . space power reactors
. . . Rankin electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
nuclear reactors
. nuclear power reactors
. . space power reactors
. . . Rankin electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
RT ⇨ electric cells
radioisotope batteries
space power unit reactors

Rankin products
DEF The large variety of smaller atoms, including cesium and strontium, left over by the splitting of uranium and plutonium, usually caused by the absorption of a neutron.
GS products
. Rankin products
RT fallout
high energy interactions
nuclear fission
nuclear particles
nuclear pumping
nuclear radiation
radioactive materials
radioactive wastes
radioactivity

Rankin weapons
UF atomic bombs
GS weapons
. nuclear weapons
. . Rankin weapons
RT fallout
nuclear devices
thermonuclear explosions

Rankinable materials
DEF Materials containing nuclides capable of undergoing fission only by fast neutrons with energy greater than 1MeV, e.g., thorium-232 and uranium-238. Used for fissile materials.
UF fissile materials
RT gaseous fission reactors
⇨ materials
nozzle flow
nuclear fuels
plutonium
radioactive materials
uranium

Rankium
GS fuels
. nuclear fuels
. . Rankium

Rankine (geology)
DEF Extensive cracks in rocks.
RT folds (geology)
geological faults
structural properties (geology)
tectonics

Rankine
GS Rankine
. flight fitness
. physical fitness
RT qualifications

Rankine
RT adaptation
adjusting
alignment
assembling
fittings
goodness of fit
interference fit
⇨ joining
matching
positioning

Rankings
RT accessories
adapters
closures
connectors
couplings
extensions
fasteners
fitting
inserts
joints (junctions)
linkages
sleeves
U bends
unions (connectors)

Fitzgerald-Lorentz contraction
USE Lorentz contraction

fix
USE fixing

Rankine point arithmetic
GS number theory
. arithmetic
. . fixed point arithmetic
RT computer programs
computers
data processing

Rankine points (mathematics)
DEF Positional notation in which corresponding places in different quantities are occupied by coefficients of the same power of the base. Notation in which the base point is assumed to remain fixed with respect to one end of the numeric expressions.
GS geometry
. Euclidean geometry
. . points (mathematics)
. . . fixed points (mathematics)
. topology
. . fixed points (mathematics)
RT manifolds (mathematics)
mapping

Rankine wings
UF fixed-wing aircraft
GS airfoils
. wings
. . Rankine wings
RT cambered wings
cruciform wings
flexible wings
low aspect ratio wings
rigid wings
slender wings
swept wings
thin wings
twisted wings
uncambered wings
unswept wings

fixed-wing aircraft
USE aircraft configurations
Rankine wings

⇨ fixing
SN USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW
UF fix
RT maintenance
navigation
position (location)
positioning

Rankines
RT brackets
hardware
jigs
turnarms
tools

Rankine effect
RT Doppler effect
Doppler–Fizeau effect
⇨ effects

Flagellata
GS animals
. protozoa
. . Flagellata
. . . Euglena
. . . hypersosoma
microorganisms
. protozoa
. . Flagellata
. . . Euglena
. . . hypersosoma

flakes
GS particles
. flakes
RT flaking
metal powder
powder (particles)

flaking
RT atomizing
chipping
comminution
cutting
disintegration
flakes
fracturing
peeling
⇨ separation
spalling
sputtering
wear

flame calorimeters
GS measuring instruments
calorimeters
. flame calorimeters
RT bomb calorimeters
drop calorimeters
heat measurement
high temperature tests
temperature measuring instruments

flame deflectors
DEF In a vertical launch, any of variously designed obstructions that intercept hot gases of rocket engines so as to deflect them away from the ground or from a structure. In captive tests, elbows in the exhaust conduits or flame buckets that deflect the flame into the open.
- QS deflectors
  - flame deflectors
- RT backfire
  - baffles
  - blast deflectors
  - chutes
  - flashback
  - launching pads
  - safety devices
  - shielding
  - test stands

flame fronts
- USE flame propagation

flame holders
- QS holders
  - flame holders
- RT combustion chambers
  - dump combustors
  - flameout
  - flames

flame interaction
- USE chemical reactions
  - flame propagation

flame ionization
- QS ionization
  - gas ionization
    - flame ionization

flame plating
- QS plating
  - flame plating
- RT coating
  - welding

flame probes
- QS measuring instruments
  - flame probes
- RT gas analysis
  - manometers
  - temperature measuring instruments

flame propagation
- UF Chapman-Jouguet flame
  - combustion waves
  - flame fronts
  - flame interaction
- QS propagation (substance)
  - flame propagation
- RT backfire
  - boundary layer combustion
  - burning rate
  - combustible flow
  - combustion
  - combustion physics
  - Damkohler number
  - detonation
  - detonation waves
  - explosions
  - flames
  - flammability
  - flashback
  - gas explosions
  - gas-metal interactions
  - ignition
  - premixed flames
  - pressure oscillations
  - pressure pulses
- <-- propagation
  - reacting flow
  - turbulent combustion
  - turbulent flames

flame quenching
- USE extinguishing
  - quenching (cooling)

flame retardants
- UF fire retardants
- QS retardants
  - flame retardants
- RT annealing (heating)
  - fabrics
  - fire prevention
  - flammability
  - ignition limits
  - inorganic compounds
  - polybrominated biphenyls
  - synthetic fibers

flame spectroscopy
- QS spectroscopy
  - flame spectroscopy
  - spectrum analysis
    - flame spectroscopy
- RT emission spectra
  - gas spectroscopy
  - line spectra
  - optogalvanic spectroscopy
  - qualitative analysis
  - spectroscopic analysis

flame spraying
- QS spraying
  - flame spraying
- RT coating
  - coatings
  - metal spraying
  - metallizing
  - plasma spraying

flame stability
- QS dynamic characteristics
  - dynamic stability
    - combustion stability
      - flame stability
    - motion stability
    - flow stability
      - flame stability
  - flow characteristics
    - flow stability
      - flame stability
  - stability
    - dynamic stability
      - combustion stability
        - flame stability
      - motion stability
      - flow stability
        - flame stability
- RT flameout
  - turbulent flames

flame temperature
- QS temperature
  - flame temperature
- RT combustion chemistry
  - combustion temperature

flameout
DEF Unintended loss of combustion in turbine engines, resulting in the loss of engine power.
- UF blowoff (combustion)
- QS extinguishing
  - flameout
- RT combustion
  - combustion chambers
  - flame holders
  - flame stability
  - gas turbine engines
  - jet engines

flames
- UF jet flames
  - laminar flames
- QS flames
  - diffusion flames
  - premixed flames
  - turbulent flames
- RT combustion
  - fire damage
  - fireballs
  - fires
  - flame holders
  - flame propagation
- <-- flame
  - heat fires
  - fuels
  - smog
  - turbulent combustion

flammability
DEF Those characteristics of a material that pertain to its relative ease of ignition and relative ability to sustain combustion. Used for combustibility and fire resistance.
- UF combustibility
  - fire resistance
- RT burning rate
  - combustion
  - detonable gas mixtures
  - fire extinguishers
  - fire fighting
  - fire point
  - flame propagation
  - flame retardants
  - flammable gases
  - flash point
  - ignition
  - ignition limits
  - ignition temperature
  - pyrophoric materials
- <-- resistance
  - smoldering
  - spurious zero combustion

flammable gases
- UF explosive gases
- QS gases
  - flammable gases
    - gaseous fuels
      - natural gas
        - liquefied natural gas
    - liquefied natural gas
    - pyrogen
- RT chemical explosions
  - detonable gas mixtures
  - explosives
  - firing (ignition)
  - flammability
  - gas explosions
  - hazards

flange wrinkling
- QS wrinkling
  - flange wrinkling
- RT buckling

flanges
- RT connectors
  - metal plates

flap control
USE aircraft control
flaps (control surfaces)

flaperons
DEF Airplane control surfaces that serve the function of both aileron and flap.
GS airfoils
ailerons
flaperons
flaps (control surfaces)
flaperons
control surfaces
ailerons
flaperons
flaps (control surfaces)
flaperons
RT aerodynamic brakes

flapping
RT airfoil oscillations
flutter
resonant vibration
rotor aerodynamics
shaking
undamped oscillations
vibration
wing oscillations

flapping hinges
GS hinges
flapping hinges
RT rotary wings
rotor aerodynamics

flaps (control surfaces)
UF flap control
GS airfoils
flaps (control surfaces)
extremely blown flaps
upper surface blown flaps
flaperons
jet flaps
split flaps
wing flaps
leading edge flaps
leading edge slats
trailing edge flaps
vortex flaps
control surfaces
flaps (control surfaces)
extremely blown flaps
upper surface blown flaps
flaperons
jet flaps
split flaps
wing flaps
leading edge flaps
leading edge slats
trailing edge flaps
vortex flaps
RT aerodynamic brakes
brakes (for arresting motion)
x control
drag devices
GAW-2 airfoil
lift devices
spoilers
x surfaces

flare stars
DEF Members of a class of dwarf stars that show sudden intensive outbursts of energy. Used for UV Ceti stars.
UF UV Ceti stars
GS celestial bodies
stars
late stars
cool stars
flare stars
main sequence stars
dwarf stars
flare stars
variable stars
flare stars
RT cataclysmic variables
M stars
solar flares
stellar activity
stellar flares
symbiotic stars

flared bodies
RT afterbodies
aircraft configurations
x flares
spacecraft configurations
symmetrical bodies

x flares
SN USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW
RT flames
flared bodies
illuminating
lighting equipment
luminaires
pyrotechnics
runway lights
solar flares
Solar Maximum Mission
solar terrestrial interactions
stellar activity
stellar flares

x flash
SN USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW
UF light duration
RT electric discharges
explosions
flash welding
flashing (vaporizing)
light (visible radiation)
radiography
solar flares

flash blindness
GS blindness
flash blindness
RT eye protection
light adaptation
vision

flash lamps
UF flash tubes
GS lighting equipment
luminaires
flash lamps
xenon vapor lamps
RT light sources
xenon lamps

flash point
DEF The temperature at which a substance, such as fuel oil, will give off a vapor that will flash or burn momentarily when ignited.
GS temperature
ignition temperature
flash point
RT combustion temperature
fire point
flammability
ignition
spontaneous combustion
vapor pressure
volatility

flash tubes
USE flash lamps

flash welding
GS welding
fusion welding
electric welding
flash welding
RT x flash
pressure welding

flashback
DEF Backward burning of a flame into the tip of a burner or torch.
RT backfire
combustion
deflagration
explosions
fires
flame deflectors
flame propagation

flashing (vaporizing)
DEF The evaporation of a heated liquid as a consequence of rapid pressure reduction.
GS phase transformations
vaporizing
flashing (vaporizing)
RT distillation
evaporation
x flash
precipitation
x separation

flashover
GS electric current
electric discharges
flashover
RT electric arcs
electric sparks
electrical faults
failure

flasks
RT bottles
glassware

flat coaxial transmission lines
USE microstrip transmission lines

flat conductors
GS conductors
flat conductors
beam leads
RT bus conductors
circuits
connectors
electric connectors
electric contacts
electric wire
wire
wiring

flat layers
RT flatness
x layers
planar structures
strata
stratification

flat panel displays
(added September 1994)
GS display devices
flat panel displays
RT avionics
miracles

human factors engineering
imaging techniques
indicating instruments

flat patterns
DEF Shape of a part or parts put in 3 space in its undefined condition.
RT castings
molds

flat plates
GS structural members
. plates (structural members)
. . **flat plates**
RT annular plates
Blasius equation
Blasius flow
circular plates
dynamic structural analysis
end plates
flatness
fluid mechanics
heat transfer
metal plates
panels
parallel plates
planar structures
plate theory
∞ plates
rectangular plates
∞ sheets
slabs
thick plates
thin plates

flat surfaces
UF *facets*
RT Cosserat surfaces
flatness
planar structures
∞ surface geometry
surface properties
∞ surfaces

flatness
GS shapes
. flatness
RT concavity
contours
convexity
etalons
flat layers
flat plates
flat surfaces
flattening
interferometers
mechanical properties
planar structures
roughness
∞ surface geometry

flats (landforms)
DEF A general term for level or nearly level surfaces or small areas of land marked by little or no relief such as plains. Also, nearly level regions that visibly display lower relief than their surroundings. Used for adobe flats and salt flats.
UF *adobe flats*
salt flats
GS landforms
. flats (landforms)
. . tidal flats
RT Earth resources
marshlands
mesas
plains
salt beds

flattening
RT ductility
ellipticity
flatness
leveling
metal working
oblate spheroids
∞ rolling
smoothing

flatworms
GS animals
. invertebrates
. . worms
. . . **flatworms**
RT infestation

flavor (particle physics)
DEF The specific identifiers of quarks which distinguish various combinations of electric charge and mass.
RT hadrons
particle interactions
particle theory
∞ physics
quantum theory
quark models
quarks
theoretical physics

flaw detection
USE **nondestructive tests**

flaws
USE **defects**

fleet ballistic missiles
UF *FBM (missiles)*
GS missiles
. surface to surface missiles
. . **fleet ballistic missiles**
. . . Polaris A1 missile
. . . Polaris A2 missile
. . . Polaris A3 missile
. . . Poseidon missiles
. . . Subroc missile
RT ballistic missile submarines
guided missile submarines
intercontinental ballistic missiles
intermediate range ballistic missiles
sea launching

Fleet Satellite Communication System
DEF Global communication system utilizing satellites. Used for FLEETSATCOM and FLTSATCOM.
UF *Fleetsatcom*
Fltsatcom
GS telecommunication
. Defense Communications Satellite System
. . **Fleet Satellite Communication System**
RT communication satellites
Marisat satellites
microwave transmission
military technology
NASCOM network
navy
radio communication
∞ systems
ultrahigh frequencies

Fleetsatcom
USE **Fleet Satellite Communication System**

flexibility
DEF That property of a material by virtue of which it may be bowed repeatedly without undergoing rupture. That property of a material by virtue of which it may be flexed or bowed repeatedly without undergoing rupture. Used for nonrigidity.
UF *nonrigidity*
GS mechanical properties
. **flexibility**
RT bending
elastic properties
flexing
nonuniformity
plastic properties
∞ rigidity
softness
stiffness
versatility

flexible bodies
GS **flexible bodies**
. flexible spacecraft
RT ∞ bodies
hybrid structures
inflatable structures

flexible spacecraft
DEF Space vehicles (usually space structures or rotating satellites) whose surfaces and/or appendages may be subject to elastic flexural deformations (vibrations).
GS aerospace vehicles
. **flexible spacecraft**
flexible bodies
. **flexible spacecraft**
RT artificial satellites
displacement
elastic deformation
flexing
large space structures
satellite control
satellite orientation
satellite rotation
shape control
∞ spacecraft
spacecraft control
spacecraft motion
structural vibration
vibration damping

flexible wings
UF *Rogallo wings*
GS airfoils
. wings
. . **flexible wings**
. . . parawings
RT fixed wings
gliders
hang gliders
infinite span wings
inflatable structures
rigid wings
thin wings
twisted wings
XV-8A aircraft

flexing
UF *flexure*
RT bending
camber
∞ chambers
curvature
deflection
deformation
distortion
flexibility

flexible spacecraft
folding
heaving
loading moments

flexors
GS anatomy
. musculoskeletal system
. . muscles
. . . **flexors**
RT joints (anatomy)

Flexowriters (trademark)
USE **automatic typewriters**

flexural strength
(added September 1995)
DEF DEF The bending load that a material can withstand without fracturing – it's resistance to fracture.
UF *bending strength*
GS mechanical properties
. fracture strength
. . **flexural strength**
RT bend tests
bending fatigue
static loads
∞ strength

flexure
USE **flexing**

flicker
RT critical flicker fusion
light transmission

flicker fusion frequency
USE **critical flicker fusion**

∞ **flight**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The movement of an object through the atmosphere or through space, sustained by aerodynamic, aerostatic, or reaction forces, or by orbital speed; especially the movement of a man–operated or man–controlled device, such as a rocket, a space probe, a space vehicle, or an aircraft. Used for flying, high altitude flight, and high speed flight.
UF *flying*
high altitude flight
high speed flight
RT aerodynamics
∞ aeronautics
balloon flight
climbing flight
coasting flight
cruising flight
flight altitude
flight control
flight mechanics
flight optimization
flight paths
flight safety
flight tests
flight time
free flight
gliding
horizontal flight
hypersonic flight
long duration space flight
lunar flight
meteorological flight
parabolic flight
rocket flight
soaring
space flight
steering
suborbital flight
supersonic flight
trajectories
transition flight
transoceanic flight
transonic flight
turning flight
vertical flight
visual flight

flight altitude
GS altitude
. **flight altitude**
RT air traffic control
ceiling (aircraft capability)
∞ flight
midaltitude

flight characteristics
DEF Characteristics exhibited by an aircraft, rocket, or the like in flight, such as a tendency to stall or to yaw, or an ability to remain stable at certain speeds. Used for flight performance and flying qualities.
UF *flight performance*
flying qualities
GS **flight characteristics**
. flight envelopes
RT aerodynamics
aircraft maneuvers
aircraft performance
aircraft specifications
airspeed
buffeting
ceiling (aircraft capability)
∞ characteristics
controllability
flight control
flutter
helicopter performance
highly maneuverable aircraft
low speed stability
maneuverability
∞ performance
quality

flight clothing
GS clothing
. **flight clothing**
RT coveralls
garments
goggles
helmets
pressure suits
protective clothing

flight computers
USE **airborne/spaceborne computers**

flight conditions
GS conditions
. **flight conditions**
RT aircraft icing
aviation meteorology
cloud cover
cockpit weather information systems
instrument flight rules
meteorological services
storms (meteorology)
visual flight
weather forecasting

flight control
GS **flight control**
. automatic flight control
. . automatic landing control
. fly by light control
. fly by tube control
. fly by wire control
. thrust vector control
RT aerobatics
air traffic control
aircraft control
aircraft instruments
aircraft survivability
attitude control
attitude indicators
automated en route ATC
automatic control
automatic pilots
∞ control
control configured vehicles
control stability
control sticks
control surfaces
display devices
entry guidance (STS)
∞ flight
flight characteristics
flight management systems
ground based control
ground support equipment
guidance (motion)
helicopter control
in–flight monitoring
instrument approach
instrument landing systems
maneuverability
maneuvers
missile control
navigation
navigation aids
navigation instruments
pointing control systems
radio navigation
remote control
rocket engine control
solar compasses
spacecraft control
stability augmentation
turbojet engine control

flight crews
UF *aircrews*
GS personnel
. crews
. . **flight crews**
. . . spacecrews
. flying personnel
. . **flight crews**
. . . spacecrews
RT aircraft pilots
crew procedures (inflight)
crew procedures (preflight)
crew size
flight fatigue
navigators
pilots (personnel)

flight envelopes
DEF The bounds within which a certain flight system can operate, especially a graphic representation of these bounds showing interrelationships of operational parameters.
GS flight characteristics
. **flight envelopes**
RT aerodynamic characteristics
aerodynamic stability
aircraft control
aircraft maneuvers
aircraft performance
aircraft stability
∞ envelopes
flight tests

helicopter performance
maneuverability
terrain following

flight fatigue
GS fatigue (biology)
. **flight fatigue**
RT aerospace medicine
flight crews
∞ flight stress
flight stress (biology)
pilot performance

flight fitness
GS fitness
. **flight fitness**
RT ∞ flight stress
flying personnel
physical examinations
physical fitness

flight hazards
GS hazards
. **flight hazards**
. . meteoroid hazards
RT air piracy
air traffic
aircraft accidents
aircraft hazards
aircraft icing
aircraft safety
aircraft spin
aviation meteorology
bird–aircraft collisions
birds
collisions
crash landing
crashes
destruction
downbursts
microbursts (meteorology)
midair collisions
noise (sound)
operational hazards
toxic hazards
weather

flight instruments
GS **flight instruments**
. approach indicators
. attitude indicators
. . gyro horizons
. automatic pilots
. flight test instruments
. horizon scanners
. radio altimeters
RT air navigation
airborne equipment
aircraft control
aircraft equipment
aircraft instruments
altimeters
bubble technique
cockpit weather information systems
compasses
display devices
engine control
engine monitoring instruments
head–up displays
instrument approach
instrument flight rules
instrument landing systems
∞ instruments
landing instruments
Light Airborne Multipurpose System
measuring instruments
navigation instruments
night flights (aircraft)
onboard equipment
position indicators
radar
radio direction finders
rate of climb indicators
recording instruments
satellite instruments
solar compasses
spacecraft instruments
spacecraft position indicators
speed indicators
star trackers
TERCOM

flight load recorders
GS aircraft instruments
. flight recorders
. . **flight load recorders**
data recorders
. flight recorders
. . **flight load recorders**
measuring instruments
. flight recorders
. . **flight load recorders**
recording instruments
. flight recorders
. . **flight load recorders**
RT strain gages

flight management systems
GS management systems
. **flight management systems**
RT air navigation
air traffic control
airborne/spaceborne computers
automatic flight control
automatic landing control
avionics
computer techniques
flight control
ground based control
navigation aids
onboard data processing
pilot support systems
systems engineering

flight mechanics
RT aerodynamics
ascent trajectories
descent trajectories
∞ flight
∞ mechanics (physics)
missile trajectories
orbit calculation
orbit decay
orbital mechanics
∞ platforms
reentry trajectories
rendezvous
rendezvous trajectories
space flight
space mechanics
spacecraft reentry
spacecraft trajectories
thrust programming
trajectories
trajectory measurement
trajectory optimization

flight nurses
GS personnel
. medical personnel
. . **flight nurses**
RT crews

flight operations
DEF Collective term for ground support operations by flight crew or support personnel preparatory to space flight, or tasks performed by crew during flight.
GS **flight operations**
. crew procedures (inflight)
RT aircraft maintenance
crew procedures (preflight)
ground handling
onboard equipment
preflight operations
refueling

flight optimization
GS optimization
. **flight optimization**
RT burning time
Earth–Venus trajectories
∞ flight
great circles
orbital mechanics
orbits
parking orbits
space flight
thrust programming
trajectories
trajectory optimization

flight paths
DEF Paths made or followed in the air or in space by an aircraft or rocket; the continuous series of positions occupied by a flying body; more strictly, the path of the center of gravity of the flying body, referred to the Earth or other fixed reference.
GS **flight paths**
. glide paths
RT air navigation
air traffic
air traffic control
aircraft instruments
aircraft maneuvers
airspace
approach
approach control
area navigation
caustic lines
climbing flight
collision avoidance
collisions
descent
∞ drift
∞ flight
gliding
Global Positioning System
great circles
ground tracks
guidance (motion)
horizontal flight
missile trajectories
National Airspace Utilization System
navigation
navigation aids
orbits
∞ paths
reentry
rocket flight
satellite ground tracks
solar compasses
swath width
Tacan
trajectories
turning flight
uncontrolled reentry (spacecraft)
vertical flight
visual flight

flight performance
USE **flight characteristics**

flight plans
RT air navigation
air traffic
air traffic control
approach
instrument flight rules
National Airspace Utilization System
∞ plans
routes
thrust programming
weather

flight recorders
GS aircraft instruments
. **flight recorders**
. . flight load recorders
data recorders
. **flight recorders**
. . flight load recorders
measuring instruments
. **flight recorders**
. . flight load recorders
recording instruments
. **flight recorders**
. . flight load recorders

flight rules
GS rules
. **flight rules**
. . instrument flight rules
. . visual flight rules
RT air navigation
air traffic control
collision avoidance
National Airspace Utilization System
National Aviation System
noise reduction

flight safety
GS safety
. **flight safety**
RT aerospace safety
air piracy
air traffic control
aircraft accidents
aircraft approach spacing
aircraft hazards
aircraft icing
aircraft safety
aircraft spin
all-weather landing systems
aviation meteorology
collision avoidance
crashes
crashworthiness
destruction
∞ flight
∞ flight stress
flying ejection seats
midair collisions
onboard equipment
safety devices
self sealing
visual flight

flight simulation
GS simulation
. **flight simulation**
RT acoustic simulation
altitude simulation
analog simulation
computerized simulation
control simulation
environment simulation
landing simulation
motion simulation
space environment simulation
space flight
systems simulation
training simulators
virtual reality
weightlessness simulation

flight simulators
DEF Training devices or apparatus that simulate certain conditions of flight or of flight operations.
GS simulators
. training simulators
. . **flight simulators**
. . . cockpit simulators
training devices
. training simulators
. . **flight simulators**
. . . cockpit simulators
RT atmospheric entry simulation
centrifuges
control simulation
cryogenic wind tunnels
Langley complex coordinator
lunar orbit and landing simulators
∞ missile simulators
motion simulation
motion simulators
pilot training
space environment simulation
space simulators
test facilities
training devices
wind tunnels

flight stability tests
GS flight tests
. **flight stability tests**
stability tests
. **flight stability tests**
RT aerodynamic stability
∞ tests

∞ **flight stress**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT flight fatigue
flight fitness
flight safety
human factors engineering
space flight stress
stress analysis
stresses

flight stress (biology)
SN (EXCLUDES MECHANICAL STRESS AND AND STRAIN)
GS stress (biology)
. **flight stress (biology)**
. . space flight stress
RT acceleration (physics)
biological effects
∞ biology
flight fatigue
jet lag
physiological factors
psychological factors
stress (physiology)
stress (psychology)
weightlessness

flight surgeons
GS personnel
. medical personnel
. . surgeons
. . . **flight surgeons**

flight technical error
USE **pilot error**

flight termination systems
USE **abort apparatus**

flight test instruments
GS flight instruments
. **flight test instruments**
RT aircraft instruments
rocket-borne instruments
spacecraft instruments

flight test vehicles
DEF Test vehicles for the conduct of flight tests either to test its own capabilities or to carry equipment requiring flight tests.
GS test vehicles
. **flight test vehicles**
RT ∞ aircraft
launch vehicles
missiles
research aircraft
∞ spacecraft
∞ vehicles
X-36 aircraft

flight tests
DEF Tests by means of actual or attempted flight to see how an aircraft, spacecraft, space-air vehicle, or missile flies. Tests of a component part of a flying vehicle, or of an object carried in such a vehicle, to determine its suitability or reliability in terms of its intended function by making it endure actual flight.
GS **flight tests**
. flight stability tests
RT air start
aircraft design
altitude tests
certification
DAST program
downrange
dynamic tests
engine tests
∞ flight
flight envelopes
free flight test apparatus
full scale tests
ground tests
high altitude tests
highly maneuverable aircraft
in-flight monitoring
missile design
missile tests
postmission analysis (spacecraft)
space electric rocket tests
stability tests
∞ tests
vibration tests
wing flow method tests

flight time
DEF The time from the moment an aircraft first moves under its own power for the purpose of flight until the moment it comes to rest at the next point of landing.
GS time
. **flight time**
RT air traffic control
burning time
∞ flight
testing time
trajectories
transit time
turnaround (STS)
windows (intervals)

flight training
GS education
. **flight training**
. . pilot training
. . space flight training
. . . astronaut training
RT ejection training
flying personnel
training simulators

∞ **flight vehicles**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aircraft configurations
ground effect machines
hypersonic vehicles
lunar flying vehicles
missiles
reentry vehicles
research vehicles
rocket vehicles
∞ vehicles

flint
GS chalcogenides
. oxides
. . dioxides
. . . **flint**
silicon compounds
. **flint**
RT quartz

flip–flops
DEF Devices having two stable states and two input terminals (or types of input signals) each of which corresponds with one of the two states. The circuits remain in either state until caused to change to the other state by application of the corresponding signal. Similar bistable devices with an input which allows it to act as a single–stage binary counter. Used for bistable amplifiers.
UF *bistable amplifiers*
GS circuits
. bistable circuits
. . **flip–flops**
. multivibrators
. . **flip–flops**
RT computer storage devices
data storage
fluid switching elements
fluidic circuits
oscillators

FLIR detectors
DEF Forward–looking infrared detectors for sensing all emissions of heat or light. Used for forward looking infrared detectors.
UF *forward looking infrared detectors*
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . infrared detectors
. . . . . **FLIR detectors**
. . infrared instruments
. . . infrared detectors
. . . . **FLIR detectors**
RT ∞ detectors
infrared radar
∞ sensors

float zones
RT crystal growth
melts (crystal growth)
silicon
solar cells
space processing
zone melting

floating
RT ballast (mass)
buoyancy
floats

floating point arithmetic
GS number theory
. arithmetic
. . **floating point arithmetic**
RT computer programs
computers
data processing

floats
UF *flotation systems*
RT ballast (mass)
buoys
emergency life sustaining systems
floating
inflatable structures
landing gear
life rafts
rafts
separators

flocculating
RT agglomeration
coagulation
coalescing
colloiding
concentrating
flotation
precipitation (chemistry)
settling
water treatment

flood control
DEF The prevention or reduction of damage caused by flooding, as by containing water in reservoirs removed from areas where it would do damage, improving channel capacity to convey water past or through critical areas with the least amount of damage, and diverting excess water into bypasses or floodways.
RT canals
∞ control
dams
drainage
hydrology
rainstorms
storm damage
storms (meteorology)
watersheds

flood damage
GS damage
. **flood damage**
RT drainage patterns
hydrology
landslides
precipitation (meteorology)
seepage
storms
storms (meteorology)
tides
water erosion
water flow

flood plains
DEF The surfaces or strips of relatively smooth land adjacent to river channels, constructed by the present rivers in their existing regimens and covered with water when the rivers overflow.
GS land
. plains
. . **flood plains**
landforms
. plains
. . **flood plains**
RT floods
hydrogeology
hydrology

flood predictions
GS predictions
. **flood predictions**
RT floods
hydrogeology
hydrology
precipitation (meteorology)
rain
rainstorms
∞ showers
storms (meteorology)
weather forecasting

floods
DEF Rising bodies of water (as in streams, lakes, seas, or behind dams) that overtop their natural or artificial confines and that cover land not normally underwater. Especially, any relatively high streamflows that overflow their banks in any reach of the stream, or that are measured by gage height of discharge quantity.
RT alluvium
drought
flood plains
flood predictions
hydrology
hydrology models
Mississippi River (US)
precipitation (meteorology)
storm damage
storms
storms (meteorology)
tides
water flow
water management
watersheds

floors
UF *decks (floors)*
RT basements
buildings
ceilings (architecture)
doors
∞ platforms
substructures
tiles
walls

Floquet theorem
GS theorems
. **Floquet theorem**
RT differential equations
linear equations
periodic functions

flora
USE **plants (botany)**

Florida
GS nations
. United States
. . **Florida**
RT Everglades (FL)
Gulf of Mexico
Merritt Island (FL)

flotation
RT activation
beneficiation
classifiers

coagulation
concentrating
flocculating
fluid rotor gyroscopes
foaming
levitation
∞ separation
settling
size separation
suspension systems (vehicles)
water treatment

flotation systems
USE **floats**

∞ **flour**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT **fines**
flour (food)

flour (food)
RT ∞ **flour**
∞ **food**
millet
powder (particles)

∞ **flow**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF A stream or movement of air or other fluid, or the rate of fluid movement, in the open or in a duct, pipe, or passage; specifically, an airflow.
RT **aerodynamics**
annular flow
Brillouin flow
cavity flow
circulation
corner flow
creep properties
cross flow
exhaust nozzles
flow equations
flow velocity
fluid flow
grazing flow
heat transmission
information flow
interactional aerodynamics
inviscid flow
low density flow
mass flow
orifice flow
outlet flow
panel method (fluid dynamics)
plastic flow
reacting flow
shear flow
solids flow
steady flow
transonic flow
unsteady flow
viscous flow

flow chambers
RT ∞ **chambers**

flow characteristics
GS **dynamic characteristics**
. **flow characteristics**
. . **flow distribution**
. . **flow stability**
. . . **boundary layer stability**
. . . **flame stability**
. . . **magnetohydrodynamic stability**
. . . . **Weibel instability**
. . **flow velocity**
. . . **solar wind velocity**
RT **barotropic flow**
∞ **characteristics**
critical flow
cross flow
eddy viscosity
inviscid flow
laminar flow
nonuniform flow
outlet flow
reattached flow
separated flow
steady flow
Strouhal number
subcritical flow
supercritical flow
turbulence
turbulent flow
viscosity
viscous flow

flow charts
DEF Graphical representations of sequences of operations using symbols to represent the operations. Flow charts are more detailed representations than diagrams.
GS **charts**
. **flow charts**
RT **block diagrams**
computer programming
data flow analysis
∞ **flow graphs**
mathematical models

flow coefficients
GS **coefficients**
. **flow coefficients**
. . **discharge coefficient**
RT **aerodynamic coefficients**
attenuation coefficients
mass flow factors
nozzle thrust coefficients
reflectance
transport properties

flow deflection
RT **computational fluid dynamics**
deflectors
flow distribution
flow velocity
Prandtl–Meyer expansion

flow direction indicators
GS **display devices**
. **flow direction indicators**
. . **wind vanes**
measuring instruments
. **indicating instruments**
. . **flow direction indicators**
. . . **wind vanes**

flow distortion
GS **distortion**
. **flow distortion**
RT **aerodynamic coefficients**
fluid flow
horseshoe vortices
multiphase flow
Orr–Sommerfeld equations
oscillating flow
small perturbation flow
vortices
wing tip vortices

flow distribution
UF ***flow fields***
flow patterns
GS **distribution (property)**
. **flow distribution**
dynamic characteristics
. **flow characteristics**
. . **flow distribution**
RT **boundary layer flow**
boundary layer separation
boundary layer thickness
cavitation flow
Chapman–Enskog theory
exhaust flow simulation
field theory (physics)
flow deflection
∞ **flow graphs**
hydrodynamic coefficients
isothermal flow
method of characteristics
numerical flow visualization
particle image velocimetry
reattached flow
rheoelectrical simulation
separated flow
stagnation point
Strouhal number
three dimensional bodies
trapped vortices
velocity distribution
vortex sheets
water tunnel tests
wind tunnel tests

flow equations
GS **flow equations**
. **boundary layer equations**
. . **Blasius equation**
. **Chaplygin equation**
. **Navier–Stokes equation**
. **Reynolds equation**
. **Von Karman equation**
. **vorticity equations**
. . **Helmholtz vorticity equation**
. **Burnett equations**
RT **Baldwin–Lomax turbulence model**
Bernoulli theorem
computational fluid dynamics
convection–diffusion equation
∞ **equations**
∞ **flow**
fluid flow
k–epsilon turbulence model
particle in cell technique
Percus method
Rayleigh equations
Reynolds averaging
turbulence models

flow fields
USE **flow distribution**

flow geometry
GS **geometry**
. **flow geometry**
RT **annular flow**
axial flow
axisymmetric flow
backward facing steps
bypass ratio
channel flow
coaxial flow
core flow
cross flow
ducted flow
helical flow
horseshoe vortices
inlet airframe configurations
inlet flow
laminar flow
meridional flow

nozzle flow
one dimensional flow
parallel flow
radial flow
steady flow
stratified flow
three dimensional flow
two dimensional flow
wedge flow

∞ **flow graphs**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT equipotentials
flow charts
flow distribution
signal flow graphs

flow measurement
GS mechanical measurement
. **flow measurement**
. . particle image velocimetry
RT anemometers
annuli
drag force anemometers
drag measurement
flowmeters
fluid flow
gas meters
hot-film anemometers
hot-wire anemometers
laser doppler velocimeters
∞ measurement
multiphase flow
nonintrusive measurement
∞ nozzles
orifices
pitot tubes
pneumatic probes
pressure measurement
rheology
solids flow
velocity measurement
Venturi tubes
water flow
wind velocity

flow nets
RT equipotentials
seepage

flow patterns
USE **flow distribution**

flow rate
USE **flow velocity**

flow regulators
GS control equipment
. regulators
. . **flow regulators**
. . . fuel flow regulators
RT flowmeters
oxygen regulators
pressure regulators

flow resistance
GS friction
. **flow resistance**
. . friction drag
. . . aerodynamic drag
. . . . supersonic drag
. . . viscous drag
RT eddy viscosity
∞ high resistance
∞ low resistance
∞ resistance
skin friction
viscosity

flow separation
USE **boundary layer separation**
separated flow

flow stability
UF *hydrodynamic stability*
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . **flow stability**
. . . . boundary layer stability
. . . . flame stability
. . . . magnetohydrodynamic stability
. . . . . Weibel instability
. flow characteristics
. . **flow stability**
. . . boundary layer stability
. . . flame stability
. . . magnetohydrodynamic stability
. . . . Weibel instability
stability
. dynamic stability
. . motion stability
. . . **flow stability**
. . . . boundary layer stability
. . . . flame stability
. . . . magnetohydrodynamic stability
. . . . . Weibel instability
RT aerodynamic stability
baroclinic instability
directional stability
fluid flow
Goertler instability
hydrodynamic equations
hydrofoil oscillations
Kelvin-Helmholtz instability
laminar flow
lateral stability
longitudinal stability
low speed stability
Orr-Sommerfeld equations
rotary stability
steady flow
Strouhal number
supersonic diffusers
systems stability
turbulent flow
unsteady flow
viscous fluids
Von Karman equation
vortex breakdown
vortex filaments
vortices
vorticity

flow theory
GS **flow theory**
. mixing length flow theory
RT aerodynamics
boundary layer equations
continuum mechanics
convection-diffusion equation
dislocations (materials)
fluid flow
fluid mechanics
hydrodynamic equations
hydrodynamics
Lighthill method
mass flow
Navier-Stokes equation
Orr-Sommerfeld equations
panel method (fluid dynamics)
pneumatics
rheology
solids flow
∞ theories

flow velocity
DEF The volume per time unit given to the flow of gases or other fluid substances which emerge from an orifice, pump, turbine, or passes along a conduit or channel. Used for flow rate.
UF *flow rate*
GS dynamic characteristics
. flow characteristics
. . **flow velocity**
. . . solar wind velocity
rates (per time)
. **flow velocity**
. . solar wind velocity
velocity
. **flow velocity**
. . solar wind velocity
RT choked flow
discharge coefficient
dump combustors
exhaust velocity
∞ flow
flow deflection
hydrodynamic coefficients
hypersonic flow
hypervelocity flow
laser anemometers
low speed
mass flow rate
parallel flow
particle image velocimetry
subsonic flow
supersonic flow
transonic flow
unsteady flow
velocity distribution
velocity measurement
vortex lattice method
vortex precession

flow visualization
UF *visualization of flow*
GS **flow visualization**
. numerical flow visualization
RT differential interferometry
fluid flow
hydraulic analogies
particle image velocimetry
Schlieren photography
shadowgraph photography
water tunnel tests
wind tunnel models

flowmeters
GS measuring instruments
. **flowmeters**
. . gas meters
. . hot-wire flowmeters
. . rheometers
RT electrical measurement
flow measurement
flow regulators
fluid flow
fuel gages
hot-wire anemometers
mechanical measurement
orifices
pitot tubes
pressure gages
pressure measurement
sonic anemometers
speed indicators
turbine instruments
velocity measurement
Venturi tubes

vortex precession

FLOX
UF *fluorine–liquid oxygen*
GS liquids
. cryogenic fluids
. . **FLOX**
oxidizers
. rocket oxidizers
. . **FLOX**
RT fluorine
liquid oxygen

Fltsatcom
USE **Fleet Satellite Communication System**

fluctuation
USE **variations**

fluctuation theory
RT homogeneous turbulence
squeezed states (quantum theory)
statistical mechanics
∞ theories

flue gases
DEF Gaseous combustion products from a furnace.
GS gases
. exhaust gases
. . **flue gases**
RT air pollution
combustion products
desulfurizing
electric power plants
flues
pollution control
scrubbers

fluence
RT health physics
ionizing radiation
radiation counters

fluerics
GS fluidics
. **fluerics**
RT fluid amplifiers
fluid switching elements
fluidic circuits
hydraulic analogies

flues
RT chimneys
draft (gas flow)
ducts
exhaust systems
flue gases
vents

fluid amplification
USE **fluid amplifiers**

fluid amplifiers
UF *fluid amplification*
fluid jet amplifiers
GS amplifiers
. **fluid amplifiers**
. . **jet amplifiers**
RT amplification
automatic control valves
boundary layer control
Coanda effect
convergent nozzles
fluerics
fluidic circuits
fluidics
hydraulic equipment
pneumatic equipment
pressure recovery
turbulent flow
turbulent jets
wall jets

fluid boundaries
GS boundaries
. **fluid boundaries**
. . gas–solid interfaces
. . jet boundaries
. . liquid–liquid interfaces
. . liquid–solid interfaces
. . liquid–vapor interfaces
interfaces
. **fluid boundaries**
. . gas–solid interfaces
. . jet boundaries
. . liquid–liquid interfaces
. . liquid–solid interfaces
. . liquid–vapor interfaces
RT backward facing steps
boundary layers
cavity flow
free boundaries
heat transfer
interface stability
liquid levels
liquid surfaces
pressure gradients

fluid dynamics
UF *cascades (fluid dynamics)*
GS fluid mechanics
. **fluid dynamics**
. . computational fluid dynamics
. . gas dynamics
. . . aerodynamics
. . . . aerothermodynamics
. . . . hypersonics
. . . . rotor aerodynamics
. . . . supersonics
. . . . unsteady aerodynamics
. . . interactional aerodynamics
. . . rarefied gas dynamics
. . hydrodynamics
. . . elastohydrodynamics
. . . electrohydrodynamics
. . . magnetohydrodynamics
. . rotons
. . vortex shedding
RT continuity equation
convection
∞ dynamics
Eyring theory
fluid management
flux vector splitting
gas–solid interactions
geophysical fluids
Glimm method
∞ hydraulics
hydromechanics
kinetics
Magnus effect
∞ mechanics (physics)
ocean dynamics
panel method (fluid dynamics)
piston theory
primitive equations
quasi-steady states
∞ science
slamming
stagnation point
steady state
streamlining
thermohydraulics
turbulence
unsteady state
vortex filaments

fluid filled shells
DEF Shells of revolution containing a gas or liquid.
GS shells (structural forms)
. **fluid filled shells**
. . liquid filled shells
RT hydrodynamic ram effect
propellant tanks
reinforced shells
shell stability
∞ storage
tanks (containers)
∞ vessels

fluid films
GS **fluid films**
. squeeze films
RT ∞ films
gas bearings
liquid–solid interfaces

fluid filters
UF *mass filters*
particulate filters
GS separators
. **fluid filters**
. . air filters
RT centrifuges
concentrators
∞ filters
filtration
fluidized bed processors
sieves
sizing screens

fluid flow
UF *induced fluid flow*
rotational flow
GS **fluid flow**
. adiabatic flow
. axial flow
. axisymmetric flow
. . annular flow
. . Karman–Bodewadt flow
. barotropic flow
. base flow
. Beltrami flow
. blood flow
. capillary flow
. cascade flow
. choked flow
. coaxial flow
. compressible flow
. . transonic flow
. conical flow
. convective flow
. . Rayleigh–Benard convection
. . . Benard cells
. core flow
. corner flow
. counterflow
. critical flow
. cross flow
. free flow
. fuel flow
. . propellant transfer
. gas flow
. . air flow
. . . air currents
. . . . jet streams (meteorology)
. . . . meridional flow
. . . . vertical air currents
. . continuum flow
. . cooling flows (astrophysics)

. . equilibrium flow
. . . frozen equilibrium flow
. . . shifting equilibrium flow
. . free molecular flow
. . Knudsen flow
. . molecular flow
. . . slip flow
. . . transition flow
. . nonequilibrium flow
. . pipe flow
. head (fluid mechanics)
. . head flow
. . pressure heads
. helical flow
. hypersonic flow
. hypervelocity flow
. incompressible flow
. . Stokes flow
. internal flow
. . cavity flow
. . channel flow
. . . open channel flow
. . ducted flow
. . . Knudsen flow
. . inlet flow
. . nozzle flow
. . pipe flow
. inviscid flow
. . stagnation flow
. isothermal flow
. jet flow
. . air jets
. . jet mixing flow
. . peripheral jet flow
. . supersonic jet flow
. laminar flow
. . Blasius flow
. . Hartmann flow
. . stratified flow
. liquid flow
. . open channel flow
. . water flow
. low density flow
. magnetohydrodynamic flow
. mass flow
. multiphase flow
. . two phase flow
. nonNewtonian flow
. nonuniform flow
. one dimensional flow
. orifice flow
. outlet flow
. parallel flow
. . pipe flow
. . three dimensional flow
. . . Karman–Bodewadt flow
. . . secondary flow
. plastic flow
. . Tresca flow
. potential flow
. . equipotentials
. radial flow
. reacting flow
. . combustible flow
. recirculative fluid flow
. reversed flow
. shear flow
. single–phase flow
. small perturbation flow
. solids flow
. steady flow
. . Couette flow
. . Hartmann flow
. steam flow
. subcritical flow
. subsonic flow
. supercritical flow
. supersonic flow
. . supersonic jet flow
. turbulent flow
. . cavitation flow
. . . supercavitating flow
. two dimensional flow
. . Couette flow
. uniform flow
. . Blasius flow
. unsteady flow
. . oscillating flow
. viscous flow
. . boundary layer flow
. . . reattached flow
. . . secondary flow
. . . separated flow
. . . . boundary layer separation
. . Couette flow
. . Karman–Bodewadt flow
. . Stokes flow
. . wall flow
. wedge flow

RT acoustic streaming
annular ducts
Bernoulli theorem
boundary layers
canals
Cartan space
chemical engineering
circulation
coaxial nozzles
∞ conductivity
convection currents
∞ currents
dimensional analysis
dimensionless numbers
drag reduction
duct geometry
expulsion
∞ flow
flow distortion
flow equations
flow measurement
flow stability
flow theory
flow visualization
flowmeters
fluidics
∞ fluids
friction
Froude number
geophysical fluid flow cells
heat transmission
∞ hydraulics
hydrodynamics
hydromechanics
injection
labyrinth seals
leakage
Lewis numbers
Magnus effect
Manning theory
materials handling
mechanical engineering
ocean currents
ocean surface
pipes (tubes)
planetary waves
pressure gradients
Rayleigh waves
Reynolds number
skin friction
solar convection (astronomy)
stellar convection
streams
supersonic boundary layers
surges
syringes
thermohydraulics
ultrasonic cleaning
vortices
wing flow method tests

fluid injection
GS injection
. **fluid injection**
. . gas injection
. . liquid injection
. . . deep well injection (wastes)
. . . water injection
RT channel flow
fuel injection
inlet flow
laminar mixing
nozzle flow
secondary injection

fluid jet amplifiers
USE **fluid amplifiers**
jet amplifiers

fluid jets
GS **fluid jets**
. air jets
. free jets
. gas jets
. hydraulic jets
. vapor jets
RT jet amplifiers
jet flow
jet mixing flow
jet streams (meteorology)
∞ jets
plasma jets

fluid logic
RT computer design
fluidic circuits
fluidics
∞ logic
logic circuits

fluid management
DEF The isolation and separation of liquids from gas in a storage vessel which operates in a reduced or zero gravity environment using liquid acquisition devices such as those used in the Space Shuttle RCS tankage.
RT cryogenic fluid storage
cryogenic fluids
cryogenic rocket propellants
fluid dynamics
fuel control
microgravity

fluid mechanics
GS **fluid mechanics**
. fluid dynamics
. . computational fluid dynamics
. . gas dynamics
. . . aerodynamics
. . . . aerothermodynamics
. . . . hypersonics
. . . . rotor aerodynamics
. . . . supersonics
. . . . unsteady aerodynamics
. . . interactional aerodynamics
. . . rarefied gas dynamics
. . hydrodynamics
. . . elastohydrodynamics
. . . electrohydrodynamics
. . . magnetohydrodynamics
. . rotons

. . vortex shedding
. hydromechanics
. . hydrodynamics
. . . elastohydrodynamics
. . . electrohydrodynamics
. . . magnetohydrodynamics
. . hydrostatics
. . . magnetohydrostatics
. pneumatics
RT aerostatics
∞ bleeding
continuum mechanics
diffusivity
∞ dynamics
flat plates
flow theory
fluidics
∞ hydraulics
hydrodynamic equations
incompressibility
kinetics
Maxwell fluids
∞ mechanics (physics)
micropolar fluids
∞ science
statics
supercritical fluids
thermodynamics

fluid power
RT compressible fluids
fluid pressure
fluidic circuits
fluidics
hydraulic control
hydraulic equipment
∞ hydraulics
hydrodynamics
incompressible fluids
pneumatic control
pneumatic equipment
pneumatics
∞ power
∞ pressure drop
working fluids

fluid pressure
GS pressure
. **fluid pressure**
. . water pressure
RT beta factor
fluid power
fluidics
∞ fluids
hydraulic fluids

fluid rotor gyroscopes
GS gyroscopes
. rotary gyroscopes
. . **fluid rotor gyroscopes**
RT flotation
gimbals

fluid switching elements
GS circuits
. switching circuits
. . **fluid switching elements**
switches
. switching circuits
. . **fluid switching elements**
RT acoustic streaming
automatic control valves
flip–flops
fluerics
fluidic circuits
fluidics
hydraulic equipment
pneumatic equipment

fluid transmission lines
GS transmission lines
. **fluid transmission lines**
RT hydraulic fluids
transmission fluids
working fluids

fluid transpiration
USE **transpiration**

fluid–solid interactions
DEF The interactions of a rigid or elastic structure with an incompressible or compressible fluid. Airblast loading and response, acoustic interaction, aeroelasticity, and hydroelasticity comprise its major divisions.
GS **fluid–solid interactions**
. gas–solid interactions
. . gas–metal interactions
RT gas–solid interfaces
∞ interactions
liquid–solid interfaces
surface reactions

fluidic circuits
GS circuits
. **fluidic circuits**
RT flip–flops
fluerics
fluid amplifiers
fluid logic
fluid power
fluid switching elements
fluidics
fly by tube control

fluidics
GS **fluidics**
. fluerics
RT amplification
∞ control
fluid amplifiers
fluid flow
fluid logic
fluid mechanics
fluid power
fluid pressure
fluid switching elements
fluidic circuits
hydraulic analogies
hydraulic control
internal flow
∞ logic
pneumatic circuits
pneumatic control
pneumatic equipment
pneumatics

fluidized bed processors
RT beds (process engineering)
chemical reactors
fluid filters
furnaces
separators

∞ **fluids**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT anisotropic fluids
binary fluids
body fluids
cerebrospinal fluid
compressible fluids
conducting fluids
cryogenic fluids
ferrofluids
fluid flow
fluid pressure
gases
gyroscope fluids
high temperature fluids
hydraulic fluids
ideal fluids
incompressible fluids
liquids
Maxwell fluids
micropolar fluids
Newtonian fluids
nonequilibrium flow
nonNewtonian fluids
rheology
rotating fluids
serums
siphoning
solids
supercritical fluids
superfluidity
transmission fluids
viscous fluids
weightless fluids
working fluids

fluorescence
DEF Emission of light or other radiant energy as a result of and only during absorption of radiation of a different wavelength from some other source. Used for fluorescent emission.
UF *fluorescent emission*
GS emission
. light emission
. . luminescence
. . . **fluorescence**
. . . . laser induced fluorescence
. . . . phosphorescence
. . . . resonance fluorescence
. . . . x ray fluorescence
RT electromagnetic absorption
extinction
Mossbauer effect
phosphors
photoexcitation
photoluminescence
plasma radiation
rhodamine
triboluminescence

fluorescent emission
USE **fluorescence**

fluorides
GS halogen compounds
. fluorine compounds
. . **fluorides**
. . . antimony fluorides
. . . barium fluorides
. . . boron fluorides
. . . chlorine fluorides
. . . compound A
. . . cryolite
. . . deuterium fluorides
. . . difluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . hydrofluoric acid
. . . metal fluorides
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides

. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . nitrogen fluorides
. . . nitryl fluorides
. . . oxyfluorides
. . . oxygen fluorides
. . . ozone fluoride
. . . perchloryl fluorides
. . . polyvinyl fluoride
. . . sulfur fluorides
. . . . sulfur hexafluoride
. . . technetium fluorides
. halides
. . fluorides
. . . antimony fluorides
. . . barium fluorides
. . . boron fluorides
. . . chlorine fluorides
. . . compound A
. . . cryolite
. . . deuterium fluorides
. . . difluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . hydrofluoric acid
. . . metal fluorides
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . nitrogen fluorides
. . . nitryl fluorides
. . . oxyfluorides
. . . oxygen fluorides
. . . ozone fluoride
. . . perchloryl fluorides
. . . polyvinyl fluoride
. . . sulfur fluorides
. . . . sulfur hexafluoride
. . . technetium fluorides
RT excimer lasers

fluorination
GS chemical reactions
. halogenation
. . fluorination
RT defluorination

fluorine
GS chemical elements
. halogens
. . fluorine
. . . fluorine isotopes
. . . liquid fluorine
RT FLOX
oxidizers

fluorine compounds
GS halogen compounds
. fluorine compounds
. . fluorides
. . . antimony fluorides
. . . barium fluorides
. . . boron fluorides
. . . chlorine fluorides
. . . compound A
. . . cryolite
. . . deuterium fluorides
. . . difluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . hydrofluoric acid
. . . metal fluorides
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . nitrogen fluorides
. . . nitryl fluorides
. . . oxyfluorides
. . . oxygen fluorides
. . . ozone fluoride
. . . perchloryl fluorides
. . . polyvinyl fluoride
. . . sulfur fluorides
. . . . sulfur hexafluoride
. . . technetium fluorides
. . fluorite
. . fluoro compounds
. . . cryolite
. . . difluoro compounds
. . . . perfluoroalkane
. . . . polytetrafluoroethylene
. . . . . teflon (trademark)
. . . fluorine organic compounds
. . . . fluoroamines
. . . . . nitrofluoroamines
. . . . . trifluoroamine oxide
. . . . fluorocarbons
. . . . fluorohydrocarbons
. . . . . carbon tetrafluoride
. . . . . chlorofluoromethane
. . . . . polytetrafluoroethylene
. . . . . teflon (trademark)
. . . . fluoropolymers
. . . . . polytetrafluoroethylene
. . . . . teflon (trademark)
. . . . . KEL-F
. . . . . polyvinyl fluoride
. . . . perfluoroalkane
. . . . perfluoroguanidine
. . . . . KEL-F
. . . . . polyvinyl fluoride
. . . . perfluoroalkane
. . . . perfluoroguanidine
. . . fluorosilicates
. . . tetrafluorohydrazine
RT∞ chemical compounds
halocarbons

fluorine isotopes
GS chemical elements
. halogens
. . fluorine
. . . fluorine isotopes
. nuclides
. . isotopes
. . . fluorine isotopes

fluorine organic compounds
UF *organic fluorine compounds*
GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . fluorine organic compounds
. . . . fluoroamines
. . . . . nitrofluoroamines
. . . . . trifluoroamine oxide
. . . . fluorocarbons
. . . . fluorohydrocarbons
. . . . . carbon tetrafluoride
. . . . . chlorofluoromethane
. . . . . polytetrafluoroethylene
. . . . . teflon (trademark)
. . . . fluoropolymers
. . . . . polytetrafluoroethylene
. . . . . teflon (trademark)
. . . . . KEL-F
. . . . . polyvinyl fluoride
. . . . perfluoroalkane
. . . . perfluoroguanidine
organic compounds
. fluorine organic compounds
. . fluoroamines
. . . nitrofluoroamines
. . . trifluoroamine oxide
. . fluorocarbons
. . fluorohydrocarbons
. . . carbon tetrafluoride
. . . chlorofluoromethane
. . . polytetrafluoroethylene
. . . . teflon (trademark)
. . fluoropolymers
. . . polytetrafluoroethylene
. . . . teflon (trademark)
. . . KEL-F
. . . polyvinyl fluoride
. . perfluoroalkane
. . perfluoroguanidine
RT∞ chemical compounds

fluorine–liquid oxygen
USE FLOX

fluorite
GS calcium compounds
. fluorite
halogen compounds
. fluorine compounds
. . fluorite
minerals
. fluorite

fluoro compounds
GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . cryolite
. . . difluoro compounds

. . . . perfluoroalkane
. . . . polytetrafluoroethylene
. . . . . teflon (trademark)
. . . fluorine organic compounds
. . . . fluoroamines
. . . . . nitrofluoramines
. . . . . trifluoroamine oxide
. . . . fluorocarbons
. . . . fluorohydrocarbons
. . . . . carbon tetrafluoride
. . . . . chlorofluoromethane
. . . . . polytetrafluoroethylene
. . . . . teflon (trademark)
. . . . fluoropolymers
. . . . . polytetrafluoroethylene
. . . . . teflon (trademark)
. . . . . KEL–F
. . . . . polyvinyl fluoride
. . . . perfluoroalkane
. . . . perfluoroguanidine
. . . fluoroalkanes
. . . tetrafluorohydrazine
RT ∞ chemical compounds
halocarbons

fluoroamines
GS amines
. fluoroamines
. . nitrofluoramines
. . trifluoroamine oxide
halogen compounds
. fluorine compounds
. . fluoro compounds
. . . fluorine organic compounds
. . . . fluoroamines
. . . . . nitrofluoramines
. . . . . trifluoroamine oxide
organic compounds
. fluorine organic compounds
. . fluoroamines
. . . nitrofluoramines
. . . trifluoroamine oxide

fluorocarbons
DEF All compounds containing fluorine and carbon (including other elements).
GS carbon compounds
. halocarbons
. . fluorocarbons
halogen compounds
. fluorine compounds
. . fluoro compounds
. . . fluorine organic compounds
. . . . fluorocarbons
. halocarbons
. . fluorocarbons
organic compounds
. fluorine organic compounds
. . fluorocarbons
RT chlorofluorocarbons
fluorohydrocarbons
fluoropolymers

fluorohydrocarbons
GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . fluorine organic compounds
. . . . fluorohydrocarbons
. . . . . carbon tetrafluoride
. . . . . chlorofluoromethane
. . . . . polytetrafluoroethylene
. . . . . teflon (trademark)
organic compounds
. fluorine organic compounds
. . fluorohydrocarbons
. . . carbon tetrafluoride
. . . chlorofluoromethane
. . . polytetrafluoroethylene
. . . . teflon (trademark)
RT fluorocarbons
freon
refrigerants
Viton rubber (trademark)

fluoromica
USE fluorosilicates
mica

fluorophlogopite
GS minerals
. mica
. . fluorophlogopite

fluoroplastics
USE fluoropolymers

fluoropolymers
DEF A family of polymers based on fluorine replacement of hydrogen atoms in hydrocarbon molecules. Compounds are characterized by chemical inertness, thermal stability, and low coefficient of friction. Used for fluoroplastics.
UF fluoroplastics
GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . fluorine organic compounds
. . . . fluoropolymers
. . . . . polytetrafluoroethylene
. . . . . teflon (trademark)
. . . . . KEL–F
. . . . . polyvinyl fluoride
organic compounds
. fluorine organic compounds
. . fluoropolymers
. . . polytetrafluoroethylene
. . . . teflon (trademark)
. . . KEL–F
. . . polyvinyl fluoride
RT fluorocarbons
plastics
∞ polymers

fluoroscopy
RT medical equipment
x ray analysis

fluorosilicates
UF fluoromica
GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . fluorosilicates
silicon compounds
. silicates
. . fluorosilicates
RT minerals

fluorspar
GS calcium compounds
. calcium fluorides
. . fluorspar
halogen compounds
. fluorine compounds
. . fluorides
. . . difluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . metal fluorides
. . . . calcium fluorides
. . . . . fluorspar
. halides
. . fluorides
. . . difluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . metal fluorides
. . . . calcium fluorides
. . . . . fluorspar
. . metal halides
. . . metal fluorides
. . . . calcium fluorides
. . . . . fluorspar
minerals
. fluorspar

flushing
RT cleaning
ejection
elution
expellants
leaching
purging
purification
∞ separation
venting
washing
waste water

fluting
USE grooving

flutter
DEF An aeroelastic self excited vibration in which the external source of energy is the airstream and which depends on the elastic, inertial and dissipative forces of the system in addition to the aerodynamic forces. Used for aerodynamic buzz and aeromagneto flutter.
UF aerodynamic buzz
aeromagneto flutter
GS vibration
. structural vibration
. . flutter
. . . panel flutter
. . . subsonic flutter
. . . supersonic flutter
. . . transonic flutter
RT aerodynamic noise
aerodynamic stability
aeroelastic research wings
aeroelasticity
aeroservoelasticity
airfoil oscillations
bending
bending vibration
boundary layer control
buffeting
compressibility effects
DAST program
flapping
flight characteristics
forced vibration
hovering
hydrofoil oscillations
influence coefficient
missile vibration
random vibration
resonant vibration
self induced vibration
shaking
spacecraft motion
turbulence effects
undamped oscillations
unsteady aerodynamics

vibration simulators
vibration tests
vibrational stress
wing oscillations

flutter analysis
GS structural analysis
. dynamic structural analysis
. . **flutter analysis**
RT aeroelastic research wings
airfoil oscillations
structural vibration
unsteady aerodynamics

∞ **flux**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The rate of flow of some quantity, often used in reference to the flow of some form of energy. In nuclear physics generally, the number of radioactive particles per unit volume times their mean velocity.
RT flux (rate)
flux density
flux difference splitting
flux quantization
fluxes
level (quantity)

flux (rate per unit area)
USE **flux density**

flux (rate)
SN (LIMITED TO THE TOTAL EMANATION OF ENERGY, MATERIAL OR PARTICLES FROM A SINGLE SOURCE PER UNIT TIME—SEE FLUX DENSITY FOR ENERGY, MATERIAL OR PARTICLE RATE PER UNIT AREA)
DEF The total emanation of energy, material or particles from a single source per unit time. Used for electron flux, neutron flux, and particle flux.
UF *electron flux*
neutron flux
particle flux
GS rates (per time)
. **flux (rate)**
. . heat flux
. . magnetic flux
. . solar flux
RT beta particles
brightness
corpuscular radiation
dosimeters
electromagnetic radiation
emittance
∞ energy
field theory (physics)
∞ flux
flux density
gamma rays
∞ intensity
level (quantity)
luminous intensity
magnetic circuits
magnetic induction
magnetostatics
particle beams
particle diffusion
∞ power
radiant flux density
∞ radiation
Stefan–Boltzmann law

flux density
SN (LIMITED TO ENERGY, MATERIAL OR PARTICLE RATE PER UNIT AREA, THE QUANTITY USUALLY MEASURED—SEE FLUX (RATE) FOR TOTAL EMANATION FROM A SINGLE SOURCE PER UNIT TIME)
DEF The flux (rate of flow) of any quantity, usually a form of energy, through a unit area of specified surface. (Note that this is not a volumetric density like radiant density.) Used for density (rate/area), energy density, flux (rate per unit area), and flux mapping.
UF *density (rate/area)*
energy density
flux (rate per unit area)
flux mapping
GS rates (per time)
. **flux density**
. current density
. . photon density
. . radiant flux density
. . . irradiance
. . . . illuminance
. . . solar constant
. . . lumens
. . . luminous intensity
. . . . illuminance
. . . . luminance
. . . particle flux density
. . . . electron flux density
. . . . neutron flux density
. . . . proton flux density
. . . radiance
. . . radiancy
. . . solar flux density
. . . . solar constant
. . sound intensity
. . . zero sound
RT alpha particles
angular distribution
atom concentration
∞ density
cosimeters
electromagnetic radiation
∞ energy
energy distribution
field intensity meters
field strength
field theory (physics)
∞ flux
flux (rate)
gamma rays
heat flux
∞ intensity
irradiation
level (quantity)
loudness
mass distribution
meteoroid concentration
Onsager phenomenological coefficient
∞ power
power spectra
protons
∞ radiation
radiation distribution
radiation hazards
remanence
scattering functions
Solar Maximum Mission
sound pressure
spectra
x ray density measurement

flux difference splitting
(added May 1995)
UF *Roe flux difference splitting scheme*
GS analysis (mathematics)
. numerical analysis
. . **flux difference splitting**
splitting
. **flux difference splitting**
RT computational fluid dynamics
finite difference theory
∞ flux
flux vector splitting

flux mapping
USE **flux density**
mapping

flux pinning
DEF In superconductors, the interaction between the magnetic and the metallurgical microstructures. It controls the critical current density in a given superconducting material.
GS pinning
. **flux pinning**
RT lines of force
magnetic flux
superconductivity
trapped magnetic fields
trapping

flux pumps
DEF Cryogenic DC generators.
RT magnetic coils
magnetic fields
superconducting magnets
superconductivity

flux quantization
RT ∞ flux
magnetic flux
superconductors (materials)

flux transfer events
(added July 1989)
GS magnetic properties
. magnetoactivity
. . **flux transfer events**
RT aeronomy
geomagnetism
interplanetary magnetic fields
lines of force
magnetic effects
magnetic field configurations
magnetic field reconnection
magnetic fields
magnetic flux
magnetopause
magnetosphere–ionosphere coupling
space plasmas

flux vector splitting
DEF The splitting of the nonlinear flux vectors of the conservation law form of the inviscid gasdynamic equations into subvectors by similarity transformations so that each subvector has associated with it a specified eigenvalue spectrum.
GS analysis (mathematics)
. numerical analysis
. . **flux vector splitting**
splitting
. **flux vector splitting**
RT computation
computational fluid dynamics
eigenvalues
finite difference theory
fluid dynamics
flux difference splitting
panel method (fluid dynamics)
vector analysis
vectors (mathematics)
vortex lattice method

fluxes
RT brazing
∞ flux
limestone
soldering
welding

fluxmeters
USE **magnetic measurement**
measuring instruments

fly ash
DEF Fine particulate, essentially noncombustible refuse, carried in a gas stream from a furnace.
GS ashes
. **fly ash**
RT air pollution
coal
combustion products
electric power plants
electrostatic precipitators
particulates
pollution control

fly by light control
(added December 1992)
UF *FBL control*
GS flight control
. **fly by light control**
RT aircraft control
fiber optics
optical fibers

fly by tube control
DEF A fluidic flight control for aircraft in which a hydraulic control signal link connects the pilot's controls to the control surface actuators.
GS flight control
. **fly by tube control**
RT aircraft control
∞ control
fluidic circuits
hydraulic equipment
servoamplifiers

fly by wire control
UF *electric aircraft*
GS flight control
. **fly by wire control**
RT aircraft control
∞ control
ground based control
spacecraft control

flyby missions
DEF Interplanetary missions in which the vehicle passes close to the target planet but does not impact it or go into orbit around it.
GS space missions
. **flyby missions**
. . Giotto mission
. . Grand Tours
. . . Mariner Jupiter–Saturn flyby
. . . Mariner Jupiter–Uranus flyby
. . . Voyager 1977 mission
. . Comet Rendezvous Asteroid Flyby Mission
. . Mariner Venus–Mercury 1973
. . Mariner–Mercury 1973
. . Near Earth Asteroid Rendezvous Mission
RT asteroid missions
Clementine spacecraft
Galileo project
Galileo spacecraft
interplanetary flight
long duration space flight
lunar flight
Mariner Mark 2 Spacecraft
Mariner program
∞ missions
outer planets explorers
space flight
swingby technique
TOPS (spacecraft)
Vega project
Voyager 1 spacecraft
Voyager 2 spacecraft

flying
USE **flight**

Flying Bedstead aircraft
USE **flying platforms**

Flying Crane helicopter
USE **H-17 helicopter**

flying ejection **seats**
GS onboard equipment
. aircraft equipment
. . ejection **seats**
. . . **flying ejection seats**
safety devices
. ejection seats
. . **flying ejection seats**
seats
. ejection **seats**
. . **flying ejection seats**
RT abort apparatus
aircraft safety
ballout
cockpits
ejectors
escape capsules
flight safety
jet engines
protection

flying personnel
GS personnel
. **flying personnel**
. . astronauts
. . . orbital workers
. . cosmonauts
. . flight crews
. . . spacecrews
. . pilots (personnel)
. . . aircraft pilots
. . . . test pilots
RT flight fitness
flight training
navigators

flying platform stability
USE **aerodynamic stability**
flying platforms

flying platforms
UF *Flying Bedstead aircraft*
flying platform stability
GS V/STOL aircraft
. vertical takeoff aircraft
. . **flying platforms**
RT ∞ aircraft
ground effect machines
jet aircraft
observation aircraft
∞ platforms
reconnaissance aircraft
research aircraft
∞ subsonic aircraft
VZ-8 aircraft

flying qualities
USE **flight characteristics**

flying spot scanners
GS optical equipment
. optical scanners
. . **flying spot scanners**
scanners
. optical scanners
. . **flying spot scanners**
RT display devices
electron guns
electron optics
image tubes
oscilloscopes
phototubes
picture tubes
television equipment
video equipment

flying wing aircraft
USE **tailless aircraft**

flywheels
GS rotating bodies
. rotors
. . **flywheels**
wheels
. **flywheels**
RT balancing
counter-rotating wheels
energy storage
engine parts
mechanical engineering
reaction wheels

FM (modulation)
USE **frequency modulation**

FM/PM (modulation)
DEF Phase modulation of a carrier by subcarrier(s) which is (are) frequency modulated by information.
GS coding
. signal encoding
. . frequency modulation
. . . **FM/PM (modulation)**
. . phase modulation
. . . **FM/PM (modulation)**
modulation
. frequency modulation
. . **FM/PM (modulation)**
. phase modulation
. . **FM/PM (modulation)**
RT data transmission

foaming
RT beneficiation
flotation
foams
metal foams
∞ separation
surface properties
swirling
wetting

foams
UF *cellular materials (non biological)*
GS **foams**
. metal foams
RT aerogels
bubbles
colloids
explosion suppression
fire extinguishers
fire fighting
foaming
low density materials
∞ materials
polyurethane foam
styrofoam (trademark)

focal plane arrays
USE focal plane devices

focal plane devices
DEF Radiation sensitive devices positioned at the focal area of electromagnetic detectors. Used for focal plane arrays.
UF *focal plane arrays*
RT arrays
charge coupled devices
infrared detectors
linear arrays
mosaics
photodiodes

foci
GS foci
. plasma focus
RT co centers
focusing
geometry
loci
co optics
points (mathematics)
resolution

focusing
GS focusing
. defocusing
. prefocusing
. self focusing
RT accommodation
adjusting
astigmatism
cameras
distance
foci
Fresnel lenses
geometrical optics
gravitational lenses
image contrast
image enhancement
laser cutting
laser drilling
lenses
panoramic cameras
solar reflectors
steering
stigmatism
vignetting

foetuses
USE fetuses

fog
DEF A loose term applied to visible aerosols in which the dispersed phase is liquid. Formation by condensation is usually implied. In meteorology, a dispersion of water or ice.
GS mixtures
. dispersions
. . colloids
. . . aerosols
. . . . fog
. . liquid–gas mixtures
. . . aerosols
. . . . fog
particles
. aerosols
. . fog
RT anvil clouds
aviation meteorology
cirrocumulus clouds
cirrostratus clouds
clouds (meteorology)
drop size
haze
haze detection
hydrometeors
mist
precipitation (meteorology)
smog
smoke
steam
stratus clouds
visibility

fog dispersal
GS weather modification
. fog dispersal
RT aerosols
climatology
cloud physics
clouds (meteorology)
dispersing
dispersions
mist
precipitation (meteorology)

foil bearings
GS bearings
. foil bearings
RT gas bearings
journal bearings

co foils
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED–CONSULT THE TERMS LISTED BELOW)
RT airfoils
foils (materials)
hydrofoils
multilayer insulation

foils (materials)
GS foils (materials)
. metal foils
RT airfoils
co foils
hydrofoils
co materials
multilayer insulation
thin plates

Fokker aircraft
GS Fokker aircraft
. F–27 aircraft
. F–28 transport aircraft
RT co aircraft

Fokker bond testers
USE adhesion tests

Fokker F 27 aircraft
USE F–27 aircraft

Fokker F 28 aircraft
USE F–28 transport aircraft

Fokker Friendship aircraft
USE F–27 aircraft

Fokker–Planck equation
GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . Fokker–Planck equation
RT Boltzmann transport equation
Brownian movements
density distribution
diffusion theory
co equations
ionized gases
stochastic processes

folding
UF *crimping*
RT bending
binding
curl (materials)
distortion
flexing

Folding Fin aircraft rocket vehicle
UF *FFAR rocket vehicle*
GS rocket vehicles
. Folding Fin aircraft rocket vehicle
RT co aircraft
solid propellant rocket engines

folding structures
UF *Rogallo wings*
telescoping structures
GS folding structures
. sailwings
RT antennas
balloons
ballutes
expandable structures
furlable antennas
inflatable space structures
inflatable structures
paddles
parachutes
paragliders
parawings
rotary wings
space erectable structures
spacecraft structures
co structures
variable geometry structures
variable sweep wings

folds (geology)
DEF Curves or bends of a planar structure such as rock strata, bedding planes, foliation, or cleavage. Folds are usually a product of deformation, although their definition is descriptive and not genetic and may include primary structures. Used for nappes.
UF *nappes*
RT Earth crust
fissures (geology)
geological faults
Great Basin (US)
co layers
outcrops
rocks
seamounts
strata
stratification

foliage
RT brown wave effect
canopies (vegetation)
deciduous trees
defoliants
green wave effect
herbicides
leaves
locusts
plants (botany)
timber vigor

folic acid
UF *vitamin M*
GS acids
. amino acids
. . folic acid
. carboxylic acids
. . folic acid
nitrogen compounds
. folic acid

organic compounds
. amino acids
. . folic acid
. carboxylic acids
. . folic acid
. cyclic compounds
. . heterocyclic compounds
. . . folic acid
vitamins
. folic acid

∞ food
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT alfalfa
barley
beverages
broths
caloric requirements
canning
carbohydrates
citrus trees
consumables (spacecrew supplies)
corn
decontamination
dehydrated food
diets
digesting
distributing
Earth resources
eating
eggs
fats
fishes
flour (food)
food chain
food production (in space)
frozen foods
fruits
gelatins
hay
leguminous plants
milk
millet
nutrition
oats
orchards
peppers
potatoes
preserving
proteins
provisioning
rations
services
soybeans
space flight feeding
space rations
spinach
starches
sugar cane
sugars
synthetic food
tomatoes
vegetables
vineyards
vitamins
yeast

food chain
DEF The scheme of feeding relationships by trophic levels which unites member species of a biological community.
RT animals
ecosystems
∞ food
plants (botany)

food intake
RT fasting
space flight feeding
synthetic food

food processing
DEF The transformation of foodstuffs into forms for easy packaging, greater palatability, longer storage, etc.
GS food processing
. canning
. preserving
RT dehydrated food
frozen foods
∞ processing

food production (in space)
RT closed ecological systems
consumables (spacecrew supplies)
∞ food
∞ production
space flight feeding
space rations

footprints
DEF Ground patterns or contours of an acoustical or microwave nature that are predictable and measurable.
RT aircraft noise
antenna radiation patterns
mathematical models

forbidden bands
GS energy bands
. forbidden bands
RT band structure of solids
∞ bands
electron energy
free electrons
lattice vibrations
wave equations

forbidden transitions
RT electron transitions
Franck–Condon principle
quantum theory
selection rules (nuclear physics)
∞ solid state physics
∞ transition
wave functions

Forbush decreases
DEF The observed decreases in cosmic ray activity in the Earth's atmosphere about a day after a solar flare. Used for Forbush effect.
UF *Forbush effect*
RT cosmic rays
∞ effects
magnetic storms
solar flares
solar furnaces
solar storms

Forbush effect
USE **Forbush decreases**

∞ force
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The cause of the acceleration of material bodies measured by the rate of change of momentum produced on a free body. Used for repulsion.
UF *repulsion*
RT acceleration (physics)
aerodynamic forces
attraction
centrifugal force
centripetal force
electric field strength
high impulse
inertia
kinetics
lines of force
loads (forces)
Lorentz force
newton
nonconservative forces
null zones
ponderomotive forces
pressure
pulling
pushing
thrust
thrust measurement
torque
torsion
Van der Waals forces
weight (mass)
zero force curves

force distribution
UF *lift distribution*
normal force distribution
GS distribution (property)
. force distribution
RT aerodynamic coefficients
aerodynamic loads
angular distribution
charge distribution
energy distribution
influence coefficient
lift drag ratio
loads (forces)
mass distribution
moment distribution
scale effect
stress concentration
stress distribution
stress intensity factors
sweep effect
thrust distribution
transverse loads
wing loading

force fields
USE **field theory (physics)**

force vector recorders
DEF Instrumentation for recording force displacements in a variety of disciplines.
GS measuring instruments
. force vector recorders
recording instruments
. force vector recorders
RT ∞ instruments

force-free magnetic fields
GS magnetic fields
. force-free magnetic fields
RT magnetic field configurations
magnetic flux
magnetohydrodynamic stability
solar flares
solar magnetic field

forced convection
GS convection
. forced convection
RT blowing
convective heat transfer
free convection
heat transfer
laminar flow
Prandtl number
Rayleigh–Benard convection

Stanton number

forced oscillation
USE **forced vibration**

forced vibration
DEF An oscillation of a system in which the response is imposed by the excitation. If the excitation is periodic and continuing, the oscillation is steady state. Used for forced oscillation and forced vibratory motion equations.
UF *forced oscillation*
forced vibratory motion equations
GS vibration
. **forced vibration**
RT flutter
free vibration
random vibration
self excitation
self induced vibration

forced vibratory motion equations
USE **equations**
forced vibration

forearm
GS anatomy
. limbs (anatomy)
. . arm (anatomy)
. . . **forearm**
appendages
. arm (anatomy)
. . **forearm**

forebodies
GS **forebodies**
. noses (forebodies)
. . nose cones
. . . ablative nose cones
. . . rocket nose cones
RT afterbodies
aircraft structures
bluff bodies
blunt bodies
blunt leading edges
∞ bows
centerbodies
cylindrical bodies
hammerhead configuration
leading edges
sharp leading edges

forecasting
UF *forecasts*
GS **forecasting**
. performance prediction
. prediction analysis techniques
. technological forecasting
. . Delphi method (forecasting)
. . pattern method (forecasting)
. . probe method (forecasting)
. . profile method (forecasting)
. weather forecasting
. . long range weather forecasting
. . nowcasting
. . numerical weather forecasting
. . statistical weather forecasting
RT ∞ analyzing
budgeting
confidence limits
correlation
curve fitting
estimates
estimating
evaluation
expectation
extrapolation
management
management methods
management planning
mathematical models
maximum likelihood estimates
mission planning
noise prediction (aircraft)
operations research
planning
predictions
probability theory
project planning
∞ projection
regression analysis
regression coefficients
reliability
reserves
risk
scheduling
statistical analysis
statistical distributions
systems engineering
time series analysis
trends

forecasts
USE **forecasting**

forehead
GS anatomy
. face (anatomy)
. . **forehead**
RT head (anatomy)
skull

foreign bodies
RT aircraft hazards
∞ bodies
injuries
meteorites

foreign policy
GS policies
. **foreign policy**
. . international relations
. . . international cooperation
. . . . outer space treaty
RT ∞ budgets
European space programs
International Hydrological Decade

foreign trade
USE **international trade**

forensic sciences
USE **law (jurisprudence)**

forest fire detection
GS detection
. **forest fire detection**
RT aerial photography
∞ detectors
haze detection
infrared detectors
infrared instruments
infrared photography
infrared radiometers
infrared scanners
measuring instruments
observation
radiometers
satellite-borne photography
surveillance

forest fires
GS fires
. **forest fires**
RT air pollution
ashes
combustion
fire prevention
firebreaks
flames
forests
smoke
wastes

forest management
GS management
. resources management
. . **forest management**
. . . reforestation
RT conservation
Earth resources
forests
land use
regional planning
timber inventory

forests
UF *lumbering areas*
GS resources
. Earth resources
. . **forests**
. . . rain forests
RT Amazon region (South America)
canopies (vegetation)
clearings (openings)
conifers
conservation
deciduous trees
defoliants
defoliation
deforestation
firebreaks
forest fires
forest management
herbicides
logging (industry)
plants (botany)
reforestation
regional planning
silviculture
timber identification
timber inventory
timber vigor
timberline
trees (plants)
wilderness

forging
UF *metal forging*
GS forming techniques
. **forging**
metal working
. **forging**
RT ausforming
billets
bulging
casting
coining
cold working
heat treatment
hot isostatic pressing
hot pressing
hot working
piercing
pressing (forming)
rheocasting
∞ rolling
squeeze casting
stamping

forks
RT conveyors
hooks

form
USE **shapes**

form factors
RT approximation
coupling coefficients
functional analysis
harmonic analysis
rectifiers
scattering coefficients
series (mathematics)
square waves
transducers
∞ variable
waveforms
x ray scattering

form perception
USE **space perception**

formaldehyde
GS aldehydes
. **formaldehyde**
RT phenol formaldehyde

formalism
RT computer programming
dynamic programming
hardware description languages
linear programming
∞ logic
nonlinear programming
parameterization
scheduling

format
RT computer programming
documents
editing
frames (data processing)
printouts
records
syntax
texts

formates
GS **formates**
. chloroformate
. nitroformates
RT formic acid
formyl ions

∞ **formation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED — CONSULT THE TERMS LISTED BELOW)
RT formations
growth
nucleation
stratigraphy

formation heat
USE **heat of formation**

formations
RT contacts (geology)
∞ formation
fracturing
gas injection
geological faults
geology
geophysics
Great Basin (US)
∞ layers
mountains
outcrops
outliers (landforms)
paleontology
perforating
permeability
petrology
porosity
rocks
shatter cones
soils
stairsteps
stratigraphy
terraces (landforms)
wettability

formhydroxamic acid
GS acids
. carboxylic acids
. . **formhydroxamic acid**
nitrogen compounds
. amides
. . **formhydroxamic acid**
organic compounds
. carboxylic acids
. . **formhydroxamic acid**

formic acid
GS acids
. carboxylic acids
. . **formic acid**
organic compounds
. carboxylic acids
. . **formic acid**
RT formates
formyl ions

formica
RT laminates
∞ polymers
thermosetting resins

forming techniques
SN (TECHNIQUES OF SHAPING ITEM)
UF *metal forming*
GS **forming techniques**
. casting
. . centrifugal casting
. . investment casting
. . propellant casting
. . rheocasting
. . sand casting
. . slip casting
. . squeeze casting
. cold working
. . cold rolling
. . electrohydraulic forming
. . explosive forming
. electroforming
. extruding
. . pultrusion
. forging
. hot working
. . ausforming
. injection molding
. magnetic forming
. metal drawing
. metal spinning
. . hydrospinning
. pressing (forming)
. . blanking (cutting)
. . coining
. . hot pressing
. . stamping
. . . hot isostatic pressing
. resin transfer molding
. roll forming
RT ∞ blanking
cutting
deposition
electromagnetic hammers
hot machining
laser cutting
machining
metal grinding
metal working
spraying
upsetting

forms (paper)
RT blanks
data acquisition

∞ **formulas**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT computation
formulas (mathematics)
formulations
Kramers–Kronig formula

formulas (mathematics)
UF *expressions (mathematics)*
GS mathematical logic
. **formulas (mathematics)**
. . Bethe–Heitler formula
RT ∞ formulas
∞ mathematics

formulations
RT admixtures
∞ composition
∞ formulas
ingredients
mixtures
parameterization
stoichiometry

formyl ions
GS ions
. molecular ions
. . **formyl ions**
. positive ions
. . cations
. . . **formyl ions**
radicals
. **formyl ions**
RT atmospheric chemistry
formates
formic acid
hydroxyl radicals
interstellar chemistry
interstellar matter

forsterite
GS magnesium compounds
. **forsterite**
minerals
. olivine
. . **forsterite**
silicon compounds
. silicates
. . **forsterite**
RT refractories

Forth (programming language)
(added December 1992)
GS languages
. programming languages
. . **Forth (programming language)**
RT computer programming

Fortisan (trademark)
GS fabrics
. **Fortisan (trademark)**
fibers
. synthetic fibers
. . **Fortisan (trademark)**
organic compounds
. carbohydrates
. . polysaccharides

. . . cellulose
. . . . Fortisan (trademark)
RT parachute fabrics

FORTRAN
UF *FAB (programming language)*
GS languages
. programming languages
. . **FORTRAN**
RT Cobol
compilers
computer programming
PL/1

forward facing steps
(added December 1995)
RT backward facing steps
boundary layer flow
separated flow

forward looking infrared detectors
USE **FLIR detectors**

forward scattering
DEF The scattering of radiant energy into the hemisphere of space bounded by a plane normal to the direction of the incident radiation and lying on the side toward which the incident radiation was advancing; the opposite of backward scatter.
GS scattering
. **forward scattering**
RT backscattering
inverse scattering
light scattering
nuclear scattering
scatter propagation

fossil fuels
DEF A general term for any hydrocarbons that may be used for fuel; chiefly petroleum, natural gas, and coal.
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . **fossil fuels**
. . . . coal
. . . . . anthracite
. . . . . lignite
. . . . . solvent refined coal
. . . . crude oil
. . . . natural gas
. . . . . liquefied natural gas
. . . . peat
resources
. Earth resources
. . **fossil fuels**
. . . coal
. . . . anthracite
. . . . lignite
. . . . solvent refined coal
. . . crude oil
. . . natural gas
. . . . liquefied natural gas
. . . peat
RT carbonaceous materials
underwater resources

fossil meteorite craters
USE **fossils**
meteorite craters

fossils
DEF Remains, traces, or imprints of an organism preserved in the Earth's crust sometime in the geologic past. Used for fossil meteorite craters.
UF *fossil meteorite craters*
RT archaeology
paleobiology
paleontology
particle tracks
radioactive age determination

Foster theory
RT network analysis
reactance
resonance
∞ theories

fouling
GS **fouling**
. antifouling
RT contamination
corrosion
deposition
ice formation
plugging
retarding

foundations
UF *bases (foundations)*
structural foundations
GS **foundations**
. pile foundations
RT basements
∞ bases
caissons
concrete structures
excavation
geotechnical engineering
overconsolidation
∞ pad
pavements
skirts
structural members
∞ structures
substructures
supports
underground structures

foundries
GS industrial plants
. **foundries**
RT furnaces
∞ metallurgy
molds

four body problem
RT celestial mechanics
many body problem
orbits
perturbation
∞ problems
three body problem

four-wave mixing
(added April 1992)
GS conjugation
. phase conjugation
. . **four-wave mixing**
RT coherent light
collimation
laser beams
light amplifiers
light beams
nonlinear optics
optical bistability
phase coherence
signal mixing
wave interaction

Fourier analysis
DEF The representation of physical or mathematical data by the use of the Fourier series of Fourier integral.
GS analysis (mathematics)
. **Fourier analysis**
. . Fourier series
RT autocorrelation
data compression
differential equations
divergence
exponential functions
frequency distribution
harmonic analysis
harmonic excitation
harmonic functions
harmonic generations
harmonic oscillation
harmonics
information theory
kurtosis
linear transformations
measure and integration
operational calculus
periodic functions
periodic variations
real variables
simple harmonic motion
time series analysis
wavelet analysis

Fourier law
GS laws
. **Fourier law**
RT thermal conductivity

Fourier series
GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . **Fourier series**
. Fourier analysis
. . **Fourier series**
. real variables
. . series (mathematics)
. . . **Fourier series**
RT Gibbs phenomenon

Fourier transformation
GS analysis (mathematics)
. functional analysis
. . integral transformations
. . . **Fourier transformation**
. . . . fast Fourier transformations
functions (mathematics)
. **Fourier transformation**
. . fast Fourier transformations
transformations (mathematics)
. integral transformations
. . **Fourier transformation**
. . . fast Fourier transformations
RT BBGKY hierarchy
holographic spectroscopy
maximum entropy method
Walsh function
wavelet analysis

Fourier-Bessel transformations
GS analysis (mathematics)
. calculus
. . **Fourier-Bessel transformations**
. functional analysis
. . integral transformations
. . . **Fourier-Bessel transformations**
. real variables
. . **Fourier-Bessel transformations**
functions (mathematics)
. **Fourier-Bessel transformations**
transformations (mathematics)
. integral transformations
. . **Fourier-Bessel transformations**
RT differential equations

series (mathematics)

foveas
DEF The central part of the retina, which contains a high concentration of the color sensitive receptors known as cones.
GS anatomy
. sense organs
. . eye (anatomy)
. . . retina
. . . . fovea
RT Saccadic eye movements

FR-1 satellite
GS artificial satellites
. French satellites
. . FR-1 satellite

fractals
DEF Highly irregular geometrical figures such as snowflakes or the boundary of a cloud whose capacity dimension is not an integer. The capacity dimension characterizes the measuring of the number of different size superimposed squares needed to cover the geometric shape. By the use of differing size boxes, one is able to determine the capacity dimension.
GS dimensions
. fractals
geometry
. fractals
RT ∞ applications of mathematics
coordinates
exponents
half spaces
∞ mathematics
ratios
set theory
∞ space
strange attractors

fractionation
GS fractionation
. chemical fractionation
. hydrocracking
RT refining
retort processing
∞ separation
solvent refined coal

fractions
SN (EXCLUDES MATHEMATICAL CONCEPTS)
RT ∞ components
fines
particle size distribution
ratios

fractography
GS imagery
. photography
. . fractography
RT brittleness
crack closure
crack geometry
crack propagation
ductility
Elber equation
fatigue (materials)
fractures (materials)
∞ metallurgy

fracture mechanics
UF *fault mechanics*
Mohr circles
RT bend tests
burst tests
caustics (optics)
crack bridging
crack closure
crack initiation
crack opening displacement
crack propagation
Elber equation
finite element method
fracturing
Griffith crack
hole geometry (mechanics)
isoparametric finite elements
J integral
∞ mechanics (physics)
micromechanics
plane strain
residual strength
rock mechanics
rupturing
short cracks
soil mechanics
strain distribution
stress distribution
stress intensity factors
stress tensors
time temperature parameter

fracture resistance
USE fracture strength

fracture strength
DEF The normal stress at the beginning of fracture. Fracture strength is calculated from the load at the beginning of fracture during a tension test and the original cross-sectional area of the specimen. Used for fracture resistance and fracture toughness.
UF *fracture resistance*
fracture toughness
GS mechanical properties
. fracture strength
. . flexural strength
RT bend tests
brittle materials
brittleness
burst tests
carbon-carbon composites
crack closure
crack initiation
crack opening displacement
crack propagation
creep rupture strength
ductile-brittle transition
ductility
earthquake resistance
eutectic composites
hardness
J integral
load carrying capacity
residual strength
∞ resistance
retirement for cause
∞ strength
toughness
yield strength

fracture toughness
USE fracture strength

fractures (materials)
GS fractures (materials)
. cracks
. . crack tips
. . edge cracks
. . microcracks
. . short cracks
. . surface cracks
RT crack opening displacement
damage
deformation
failure
fractography
∞ materials

fracturing
GS fracturing
. cracking (fracturing)
. . stress corrosion cracking
. crustal fractures
RT brittleness
chipping
crack closure
crack opening displacement
crack propagation
cutting
flaking
formations
fracture mechanics
fragmentation
fragments
metal fatigue
perforating
∞ separation
spalling
splitting
stress functions
structural failure

fragmentation
UF *shattering*
RT acoustic streaming
breaking
bursts
chipping
comminution
fracturing
fragments
penetration
Sabot projectiles
shrapnel
spalling
terminal ballistics

fragments
RT chips
debris
ejecta
fracturing
fragmentation
shrapnel

frame photography
GS imagery
. photography
. . frame photography
RT black and white photography
framing cameras
high speed cameras

frames
GS frames
. airframes
. chassis
. undercarriages
RT carriages
springs (elastic)
∞ structures
struts
supports
trusses

frames (data processing)
RT data management
data processing
format
image processing

framing cameras
GS optical equipment
. cameras
. . high speed cameras
. . . **framing cameras**
photographic equipment
. cameras
. . high speed cameras
. . . **framing cameras**
RT frame photography
rotating mirrors

France
GS nations
. **France**
. . French Guiana
. . Guadeloupe
. . Martinique
RT Andorra
English Channel
Europe
French space program
Pyrenees Mountains (Europe)
Rhone Delta (France)

francium
GS chemical elements
. **alkali metals**
. . **francium**
metals
. **alkali metals**
. . **francium**

Franck–Condon principle
RT Born–Oppenheimer approximation
color centers
conduction bands
electron transitions
forbidden transitions
optical transition

Fraunhofer line discriminators
GS circuits
. discriminators
. . **Fraunhofer line discriminators**
RT absorption spectra
luminescence
measuring instruments
spectroscopic analysis
spectroscopy

Fraunhofer lines
DEF Dark lines in the absorption spectrum of solar radiation due to absorption by gases in the outer portions of the sun and in the Earth's atmosphere.
GS spectra
. radiation spectra
. . absorption spectra
. . . **Fraunhofer lines**
. . electromagnetic spectra
. . . line spectra
. . . . **Fraunhofer lines**
. spectral bands
. . absorption spectra
. . . **Fraunhofer lines**
RT absorption spectroscopy
optogalvanic spectroscopy
solar spectra

Fraunhofer region
USE **far fields**

Fredholm equations
UF *Fredholm operators*
GS analysis (mathematics)
. functional analysis
. . integral equations
. . . **Fredholm equations**
RT∞ equations
ill-posed problems (mathematics)
Pomeranchuk theorem

Fredholm operators
USE **Fredholm equations**
operators (mathematics)

free atmosphere
DEF That portion of the Earth's atmosphere, above the planetary boundary layer, in which the effect of the Earth's surface friction on the air is negligible, and in which the air is usually treated (dynamically) as an ideal fluid. The base of the free atmosphere is usually taken as the geostrophic wind level.
GS Earth atmosphere
. **free atmosphere**
RT biosphere
middle atmosphere
primitive Earth atmosphere

free boundaries
GS boundaries
. **free boundaries**
RT fluid boundaries
interfaces
jet flow
jet mixing flow
jet streams (meteorology)
liquid surfaces
liquid–liquid interfaces
liquid–vapor interfaces

free convection
UF *natural convection*
thermal convection
GS convection
. **free convection**
. . Rayleigh–Benard convection
. . . Benard cells
RT convection currents
convective flow
convective heat transfer
forced convection
laminar flow
Marangoni convection
porous boundary layer control
solar convection (astronomy)
stellar convection
temperature
thermosiphons
turbulent flow

free electron lasers
DEF Multifrequency lasers utilizing optical radiation amplification by a beam of free electrons passing through a vacuum in a transverse periodic magnetic field, as opposed to conventional lasers in which the oscillating electrons are bound to atoms and molecules and have a specific wavelength.
GS stimulated emission devices
. lasers
. . **free electron lasers**
RT diffraction radiation
wiggler magnets

free electrons
DEF Electrons which are not bound to an atom.
GS charge carriers
. **free electrons**
particles
. charged particles
. . energetic particles
. . . electrons
. . . . **free electrons**
. corpuscular radiation
. . energetic particles
. . . electrons
. . . . **free electrons**
. elementary particles
. . fermions
. . . leptons
. . . . electrons
. . . . . **free electrons**
RT Brillouin zones
conduction electrons
electron avalanche
electron density (concentration)
electron gas
forbidden bands
plasma frequencies
recombination coefficient

free energy
GS thermodynamic properties
. **free energy**
. . Gibbs free energy
RT chemical energy
∞ energy
energy of formation
enthalpy
Gibbs–Helmholtz equations
internal energy
∞ level
molecular energy levels
thermal energy
thermodynamics

free fall
DEF The fall or drop of a body, such as a rocket, not guided, not under thrust, and not retarded by a parachute or a braking device. The free and unhampered motion of a body along a Keplerian trajectory, in the force of gravity is counterbalanced by the force of inertia.
RT air drop operations
ballistic trajectories
falling spheres
parachute descent
parafoils
weightlessness

free flight
DEF Unconstrained or unassisted flight, as in the flight of a rocket after consumption of its propellant or after motor shutoff, in the flight of an unguided projectile, and in the flight in certain kinds of wind tunnels of unmounted models.
RT∞ flight
gliders
gliding
hang gliders

free flight test apparatus
RT flight tests
∞ test equipment

free flow
UF *free stream effects*
free streams
GS fluid flow
. **free flow**
RT void ratio

free jets
DEF Fluid jets without solid boundaries, such as a jet discharging into the open.
GS fluid jets
. **free jets**
RT jet boundaries
jet flow
∞ jets

free molecular flow
GS fluid flow
. gas flow
. . **free molecular flow**
RT continuum flow
kinetic theory
Knudsen flow
molecular beams
rarefied gas dynamics
rarefied gases
slip flow
transition flow

free oscillations
USE **free vibration**

free radicals
DEF Atoms or groups of atoms broken away from stable compounds by application of external energy, and, although containing unpaired electrons, remaining free for transitory or longer periods.
GS radicals
. **free radicals**
. . hydroxyl radicals
RT amino radical
atoms
carbenes
ions
negative ions
oxygen ions
trivalent ions
vinyl radical

free stream effects
USE **free flow**

free streams
USE **free flow**

free vibration
DEF Oscillation of a system in the absence of external forces. Used for free oscillations.
UF *free oscillations*
GS vibration
. **free vibration**
RT forced vibration
linear vibration
proton precession
self excitation
self induced vibration
vibration mode

free wing aircraft
RT aerodynamics
∞ aircraft
aircraft design
control surfaces

free-piston engines
DEF Engines in which the pistons are not connected to the crank.
GS engines
. piston engines
. . **free-piston engines**
RT AC generators
linear alternators
pistons
spacecraft power supplies
Stirling engines

Freedom Fighter aircraft
USE **F-5 aircraft**

Freedom Space Station
USE **Space Station Freedom**

freeze drying
GS drying
. **freeze drying**
RT dehydrated food
dehydration
freezing
frozen foods
preserving

freezing
GS phase transformations
. **freezing**
. . vibrational freezing
. . zone melting
RT antifreezes
bay ice
cloud glaciation
cold traps
cooling
cryogenic cooling
crystallization
freeze drying
frost
ice formation
ice nuclei
low temperature
melting
preserving
pressure ice
refrigerating
sea ice
solidification
solidified gases

freezing points
USE **melting points**

freight
USE **cargo**

freight costs
GS costs
. **freight costs**
RT cargo
freighters
transportation

freighters
RT freight costs
harbors
transportation
wharves

French Equatorial Congo
USE **Congo (Brazzaville)**

French Guiana
GS nations
. France
. . **French Guiana**
RT Caribbean region
South America

French satellites
GS artificial satellites
. **French satellites**
. . D-1 satellite
. . D-2 satellites
. . EOLE satellites
. . FR-1 satellite
. . GEOLE satellites
. . PEOLE satellites
. . Poseidon satellite
. . SPOT (French satellite)
. . SRET satellites
. . . SRET 1 satellite
. . . SRET 2 satellite
RT European space programs
METEOSAT satellite
Symphonie satellites

French space program
(added December 1990)
GS programs
. space programs
. . European space programs
. . . **French space program**
RT EOLE satellites
France
GEOLE satellites
Granat satellite
Hermes manned spaceplane
international cooperation
METEOSAT satellite
∞ research projects
space exploration
space missions
∞ spacecraft
SRET 1 satellite
SRET satellites

Frenkel defects
GS defects
. crystal defects
. . point defects
. . . vacancies (crystal defects)
. . . . **Frenkel defects**

freon
RT air conditioning
coolants
cooling
cooling systems
fluorohydrocarbons
gas cooling
refrigerants
refrigerating

frequencies
DEF Of a function periodic in time, the reciprocals of primitive periods. The unit is the cycle per unit time and must be specified. Used for frequency bands.
UF *frequency bands*
GS **frequencies**
. acoustic frequencies
. . audio frequencies
. . . quefrencies
. beat frequencies
. broadband
. Brunt-Vaisala frequency
. carrier frequencies
. critical frequencies
. cyclotron frequency
. infrasonic frequencies
. ionization frequencies
. maximum usable frequency
. Nyquist frequencies
. plasma frequencies
. radio frequencies
. . extremely low frequencies
. . high frequencies
. . intermediate frequencies
. . low frequencies
. . . very low frequencies
. . microwave frequencies
. . . C band
. . . extremely high frequencies
. . . P band
. . . superhigh frequencies
. . ultrahigh frequencies
. . . P band
. . very high frequencies
. . . P band
. resonant frequencies
. subaudible frequencies
. sweep frequency
RT aeolian tones

amplitudes
∞ bands
bandwidth
broadband amplifiers
channel capacity
∞ channels
frequency distribution
frequency ranges
frequency rouse
harmonics
line spectra
longitudinal waves
microchannels
millimeter waves
narrowband
∞ pitch
radio waves
spectral bands
standing waves
submillimeter waves
superharmonics

frequency analyzers
RT harmonic analysis
intermodulation
oscilloscopes
selective fading
signal analysis
spectrum analysis
sweep frequency
∞ test equipment
vibration measurement

frequency assignment
DEF The specific frequency or frequencies authorized by competent authority; expressed for each channel by: (a) the authorized carrier frequency, the frequency tolerance, and the authorized emission bandwidth, (b) the authorized emission bandwidth in reference to a specific assigned frequency (when a carrier does exist), or (c) the authorized frequency band (when a carrier does not exist).
RT communicating
frequency reuse
maximum usable frequency
orbit spectrum utilization

frequency bands
USE **frequencies**

frequency compression demodulators
GS demodulators
. **frequency compression demodulators**

frequency control
UF *frequency regulation*
GS **frequency control**
. automatic frequency control
RT autodynes
∞ control
crystal oscillators
frequency pulling
quartz crystals
signal stabilization

frequency conversion
USE **frequency converters**

frequency converters
UF *frequency conversion*
frequency translation
GS **frequency converters**
. down-converters
. frequency dividers
. frequency multipliers
. frequency synthesizers
. parametric frequency converters
. up-converters
RT ∞ conversion
∞ converters
harmonic generators
mixing circuits
parametric amplifiers
pulse width amplitude converters

frequency discriminators
DEF Electronic circuits which deliver output voltages proportional to the deviations of signals from predetermined frequency values.
GS circuits
. discriminators
. . frequency discriminators

frequency distribution
SN (OF CYCLIC VARIATIONS)
GS distribution (property)
. frequency distribution
. . kurtosis
RT cycles
Fourier analysis
frequencies
subaudible frequencies

frequency dividers
GS frequency converters
. frequency dividers
RT down-converters

frequency division multiple access
DEF A method of providing multiple access to communication satellites in which the transmissions from a particular Earth station occupy a particular assigned frequency band. In the satellite, the signals are simultaneously amplified and transposed to a different frequency band and retransmitted. The Earth station identifies its receiving channel according to its assigned frequency band in the satellite signal. Used for FDMA.
UF *FDMA*
GS telecommunication
. multiple access
. . frequency division multiple access
transmission
. signal transmission
. . data transmission
. . . multiple access
. . . . frequency division multiple access
RT Aloha system
code division multiple access
code division multiplexing
multiplexing
radio communication
time division multiple access

frequency division multiplexing
DEF The combining of a number of signals to share a medium by dividing it into different frequency bands for each signal.
GS transmission
. multiplexing
. . frequency division multiplexing
RT carrier frequencies
communication networks
data transmission
demultiplexing
multiple access
pulse communication
radio communication
satellite transmission
telecommunication
time division multiplexing
wavelength division multiplexing

frequency hopping
DEF Random changing of frequencies in transmission to mislead or prevent interception by unauthorized equipment.
RT frequency reuse
frequency shift keying
jamming
spread spectrum transmission
transmission efficiency

frequency measurement
RT acoustic measurement
∞ measurement
time measurement
vibration measurement

frequency modulation
DEF Angle modulation of a sine wave carrier in which the instantaneous frequency of the modulated wave differs from the carrier frequency by an amount proportional to the instantaneous value of the modulating wave.
UF *FM (modulation)*
GS coding
. signal encoding
. . frequency modulation
. . . feedback frequency modulation
. . . FM/PM (modulation)
. . . frequency shift keying
. . . pulse frequency modulation
modulation
. frequency modulation
. . feedback frequency modulation
. . FM/PM (modulation)
. . frequency shift keying
. . pulse frequency modulation
RT amplitude modulation
automatic frequency control
capture effect
carrier to noise ratios
companding
demodulation
demodulators
intermodulation
light modulation
line of sight communication
modulators
phase modulation
pulse frequency modulation telemetry
pulse modulation
vocoders
voltage controlled oscillators

frequency modulation photomultipliers
GS amplifiers
. current amplifiers
. . photomultiplier tubes
. . . frequency modulation photomultipliers
electron tubes
. cold cathode tubes
. . phototubes
. . . photomultiplier tubes
. . . . frequency modulation photomultipliers
RT cathodes
vacuum tube oscillators

frequency multipliers
GS frequency converters
. frequency multipliers
RT phase matching

frequency pulling
(added July 1991)
UF *pulling (frequency stability)*
RT distortion
frequency control
frequency shift
frequency stability
laser outputs
laser stability
oscillators
stable oscillations
tuning

frequency ranges
DEF Specifically designated parts of the frequency spectrum.
GS range (extremes)
. **frequency ranges**
. . octaves
. . radio range
. . subaudible frequencies
RT acoustic frequencies
bandwidth
dynamic range
frequencies
frequency response
frequency reuse

frequency regulation
USE **frequency control**

frequency response
UF *phase response*
GS responses
. **frequency response**
RT acuity
broadband
distributed amplifiers
dynamic characteristics
dynamic range
dynamic response
equalizers (circuits)
excitation
frequency ranges
linear filters
linear receivers
log periodic antennas
logarithmic receivers
perception
pulse repetition rate
ramp functions
sensitivity
smear
spectral sensitivity
step functions
stroking tests
thresholds (perception)

frequency reuse
DEF A digital satellite communication technique which features the reuse of frequency bands in a downlink transmission to provide high power utilization and flexible accommodation of dynamic source destination traffic patterns.
RT data links
downlinking
frequencies
frequency assignment
frequency hopping
frequency ranges
maximum usable frequency
microwave transmission
radio transmission
satellite transmission
uplinking

frequency scanning
GS scanning
. **frequency scanning**
RT panoramic scanning
radar scanning
spectrum analysis
sweep circuits
sweep frequency

frequency shift
RT Brillouin effect
Doppler effect
Doppler–Fizeau effect
frequency pulling
gyrotropism
∞ shift

frequency shift keying
DEF That form of frequency modulation in which the modulating wave shifts the output frequency between predetermined values, and the output wave is coherent with no phase discontinuity.
GS coding
. signal encoding
. . frequency modulation
. . . **frequency shift keying**
keying
. **frequency shift keying**
modulation
. frequency modulation
. . **frequency shift keying**
RT frequency hopping
radio transmission

frequency stability
UF *acoustic stability*
GS dynamic characteristics
. dynamic stability
. . **frequency stability**
stability
. dynamic stability
. . **frequency stability**
RT crystal oscillators
frequency pulling
laser stability
oscillators
quartz crystals
stable oscillations
voltage controlled oscillators

frequency standards
GS standards
. **frequency standards**
RT atomic clocks
gas masers
ion storage
masers
resonators
time signals

frequency synchronization
GS synchronism
. frequency **synchronization**
RT bit synchronization
Doppler effect
homodyne reception
sweep frequency
synchronized oscillators
syntony

frequency synthesizers
GS frequency converters
. **frequency synthesizers**
signal generators
. **frequency synthesizers**
RT mixing circuits
oscillators
synthesizers

frequency translation
USE **frequency converters**

fresh water
DEF Water in rivers, lakes, springs, etc. containing no significant amounts of dissolved salts.
GS water
. **fresh water**
RT AgRISTARS project
aquifers
ground water
limnology
potable water
reservoirs
springs (water)

Fresnel diffraction
GS diffraction
. **Fresnel diffraction**
RT gratings (spectra)
interferometry
speckle interferometry

Fresnel integrals
UF *Fresnel–Kirchhoff integrals*
GS functions (mathematics)
. **Fresnel integrals**
RT diffraction patterns
trigonometric functions
wave diffraction

Fresnel lenses
DEF Thin lenses constructed with stepped setbacks so as to have the optical properties of much thicker lenses.
GS lenses
. **Fresnel lenses**
RT focusing
∞ optics

Fresnel reflectors
DEF Devices characterized by a set of mirrors with varying orientation arranged so as to have the optical properties of a smooth reflector, e.g., parabolic reflector.
GS mirrors
. **Fresnel reflectors**
reflectors
. **Fresnel reflectors**
RT interferometry
slits
speckle interferometry

Fresnel region
DEF The region between the antenna and the Fraunhofer region.
GS regions
. **Fresnel region**
RT antenna radiation patterns
diffraction patterns
far fields

Fresnel–Kirchhoff integrals
USE **Fresnel integrals**

fretting
RT erosion
fatigue (materials)
tribology
wear tests

fretting corrosion
GS corrosion
. **fretting corrosion**
RT fatigue (materials)
stress corrosion

wear

friction
DEF The resistance to the relative motion of one body sliding, rolling, or flowing over another body with which it is in contact.
GS **friction**
. dry friction
. flow resistance
. . friction drag
. . . aerodynamic drag
. . . . supersonic drag
. . . viscous drag
. internal friction
. kinetic friction
. . sliding friction
. skin friction
. . friction drag
. . . aerodynamic drag
. . . . supersonic drag
. . . viscous drag
. static friction
RT abrasion
coefficient of friction
drag
drag reduction
energy dissipation
fluid flow
mechanical impedance
∞ pressure drop
scoring
surface properties
surface roughness
traction
tribology
triboluminescence
wear
wear tests
wheel brakes

friction coefficient
USE **coefficient of friction**

friction drag
UF *nonequilibrium drag*
GS dynamic characteristics
. drag
. . **friction drag**
. . . aerodynamic drag
. . . . supersonic drag
. . . viscous drag
friction
. flow resistance
. . **friction drag**
. . . aerodynamic drag
. . . . supersonic drag
. . . viscous drag
. skin friction
. . **friction drag**
. . . aerodynamic drag
. . . . supersonic drag
. . . viscous drag
RT minimum drag
pressure drag
riblets
satellite drag
surface roughness effects
wave drag

friction factor
UF *friction loss coefficient*
RT coefficient of friction
pressure gradients
skin friction

friction loss coefficient
USE **friction factor**

friction measurement
GS mechanical measurement
. **friction measurement**
RT elastohydrodynamics
kinetic friction
∞ measurement
static friction

friction pressure drop
USE **skin friction**

friction reduction
RT antifriction bearings
coefficient of friction
lubrication
∞ reduction
streamlining

friction welding
GS welding
. pressure welding
. . **friction welding**

frictionless environments
GS environments
. **frictionless environments**
RT deep space
levitation

Friedel–Craft reaction
GS chemical reactions
. **Friedel–Craft reaction**
RT acylation
alkylation

Friendship 7
GS manned spacecraft
. Mercury spacecraft
. . **Friendship 7**
reentry vehicles
. recoverable spacecraft
. . Mercury spacecraft
. . . **Friendship 7**
soft landing spacecraft
. Mercury spacecraft
. . **Friendship 7**
space capsules
. Mercury spacecraft
. . **Friendship 7**
RT Mercury MA-6 flight

fringe multiplication
DEF The duplicating effect of a family of curves superimposed on another family of curves so that the curves intersect at angles less than 45 degrees. A new family of curves appears which pass through intersections of the original curves.
RT diffraction patterns
interference grating
Moire effects
Moire fringes
multiplication
photoelastic analysis
stress analysis
stress concentration

fringe patterns
USE **diffraction patterns**

frit
DEF A powdered ceramic prepared by fusing a physical mixture of oxides into a uniform melt, which is then quenched and milled into a fine, homogeneous powder.
RT ceramics
fusion (melting)
glazes
vitreous materials

frogs
GS animals
. vertebrates
. . amphibia
. . . **frogs**

frontal areas (meteorology)
USE **fronts (meteorology)**

frontal waves
RT ocean currents
oceanography
tsunami waves
water waves
∞ waves

∞ fronts
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cold fronts
fronts (meteorology)
shock fronts
warm fronts
wave fronts

fronts (meteorology)
DEF The contacts at the Earth's surface between two different air masses commonly cold and warm, that generally move in an easterly direction. Used for frontal areas (meteorology) and weather fronts.
UF *frontal areas (meteorology)*
weather fronts
GS fronts (meteorology)
. cold fronts
. warm fronts
RT air masses
arc clouds
∞ fronts
intertropical convergent zones
marine meteorology
meteorological parameters
meteorology
storms
synoptic meteorology
thunderstorms
tornadoes

frost
RT bay ice
dew
freezing
ice
low temperature

frost damage
GS damage
. **frost damage**
RT cold weather
∞ crops
farm crops
fruits
low temperature
orchards
plants (botany)

frostbite
GS injuries
. **frostbite**
RT cold tolerance

Froude number
DEF The nondimensional ratio of the inertial force to the force of gravity for a given fluid flow; the reciprocal of the Reech number.
GS dimensionless numbers
. **Froude number**
ratios

. Froude number
RT fluid flow
inertia
kinetic energy
potential energy
Reynolds number
Strouhal number

frozen equilibrium flow
GS fluid flow
. gas flow
. . equilibrium flow
. . . frozen equilibrium flow
RT shifting equilibrium flow

frozen foods
RT ∞ food
food processing
freeze drying
preserving
refrigerating

frozen soils
USE permafrost

fruits
GS farm crops
. fruits
RT agriculture
bollworms
botany
∞ food
frost damage
orchards

frustration
RT disabilities
emotional factors
emotions
∞ inhibition
lethargy
psychological effects
psychology

frustums
RT cones
geometry
pyramids
volume

fuel capsules
RT ∞ capsules
nuclear fuels
pellets
spent fuels

fuel cell catalysts
USE electrocatalysts

fuel cell power plants
DEF Power generating devices that directly produce electrical energy from chemical energy and consist of fuel processors, stacked fuel cells, and dc to ac converters. The main types, distinguished by electrolytes which are heated to different temperatures, are base, phosphoric acid, molten carbonate, and solid oxide.
GS electric power plants
. fuel cell power plants
RT coal gasification
energy technology
fuel cells

fuel cells
SN (EXCLUDES BATTERIES)
DEF Devices which convert chemical energy directly into electrical energy but differing from a storage battery in that the reacting chemicals are supplied continuously as needed to meet output requirements.
GS electric generators
. direct power generators
. . fuel cells
. . . biochemical fuel cells
. . . hydrogen oxygen fuel cells
. . . molten carbonate fuel cells
. . . phosphoric acid fuel cells
. . . regenerative fuel cells
. . . solid oxide fuel cells
electrochemical cells
. fuel cells
. . biochemical fuel cells
. . hydrogen oxygen fuel cells
. . molten carbonate fuel cells
. . phosphoric acid fuel cells
. . regenerative fuel cells
. . solid oxide fuel cells
RT ∞ cells
chemical auxiliary power units
∞ electric cells
electrocatalysts
electrochemistry
electrolytes
energy conversion efficiency
energy storage
fuel cell power plants
hydrogen fuels
hydrogen-based energy
ion exchange membrane electrolytes
magnetohydrodynamic generators
solar cells
solar generators
thermionic converters
thermoelectric generators
wet cells

fuel combustion
GS combustion
. fuel combustion
. . nuclear fuel burnup
RT combustion efficiency
combustion stability
erosive burning
hydrocarbon combustion
hypersonic combustion
ignition
metal combustion
oxidation
propellant combustion
solid propellant combustion
spontaneous combustion
supersonic combustion
turbulent combustion

fuel conservation
USE fuel consumption

fuel consumption
DEF The using of fuel by an engine or power plant; the rate of this consumption, measured, e.g., in gallons or pounds per minute.
UF *fuel conservation*
GS consumption
. fuel consumption
RT burning rate
combustion efficiency
energy consumption
energy requirements
engines
internal combustion engines
propellant consumption
refueling

fuel contamination
GS contamination
. fuel contamination
RT anticing additives
contaminants
refueling

fuel control
RT combustion control
∞ control
engine control
fluid management
liquid sloshing
propellant transfer
refueling
rocket engine control
turbojet engine control

fuel corrosion
GS corrosion
. fuel corrosion
RT propellant decomposition
propellant storability

fuel elements (nuclear reactors)
USE nuclear fuel elements

fuel flow
GS fluid flow
. fuel flow
. . propellant transfer
RT combustible flow
ducted flow
particle laden jets
reacting flow

fuel flow regulators
GS control equipment
. regulators
. . flow regulators
. . . fuel flow regulators

fuel gages
GS measuring instruments
. fuel gages
. . capacitive fuel gages
RT flowmeters

fuel injection
UF *injection carburetors*
GS injection
. fuel injection
RT burners
carburetors
fluid injection
gas injection
injectors
internal combustion engines
jet engines
jet mixing flow
∞ jet nozzles
liquid injection
piston engines
propellant sprays
spray nozzles

fuel oils
GS fuels
. clean fuels
. . fuel oils
oils
. fuel oils
RT energy policy
kerogen
kerosene
shale oil
solvent refined coal

fuel production
DEF Producing of conventional and/or alternative fuels by various technologies.
GS **fuel production**
. hydrocarbon fuel production
RT chemical fuels
composite propellants
crude oil
fission
∞ fusion
hydrocarbon fuels
hydrogen fuels
liquid fuels
nuclear fuels
∞ production

fuel pumps
GS pumps
. **fuel pumps**
RT aircraft fuel systems
axial flow pumps
centrifugal pumps
electromagnetic pumps
internal combustion engines
jet engines
jet pumps
materials handling
turbine pumps

fuel sprays
RT liquid injection
propellant sprays
sprayers

fuel systems
GS **fuel systems**
. **aircraft fuel systems**
RT accumulators
automobiles
bunkers (fuel)
carburetors
chokes (fuel systems)
engines
feeders
fuels
injectors
inlet temperature
intake systems
internal combustion engines
manifolds
plenum chambers
propellant transfer
refueling
self sealing
spray nozzles
∞ systems

fuel tank pressurization
GS pressurizing
. **fuel tank pressurization**
RT aircraft fuel systems
exhaust systems
expulsion bladders
liquid rocket propellants
pressure
pressure regulators
pressure vessels
propellant storage
propellant tanks
propulsion
relief valves
ullage
vapor pressure

fuel tanks
GS tanks (containers)
. **fuel tanks**
. . wing tanks
RT aircraft fuel systems
∞ containers
corrosion prevention
cryogenic fluid storage
cylindrical tanks
expulsion bladders
external tanks
feed systems
fuels
heating equipment
liquid sloshing
pods (external stores)
pressure vessels
propellant storage
propellant tanks
propellants
propulsion
protuberances
spacecraft structures
spherical tanks
storage tanks
tanker aircraft
ullage

fuel tests
GS **fuel tests**
. reactor startup tests
RT chemical analysis
corrosion tests
engine tests
∞ materials tests
missile tests
propellant tests
stability tests
test firing
∞ tests

fuel valves
GS valves
. **fuel valves**
RT aircraft fuel systems
gas valves
relief valves

fuel–air ratio
GS ratios
. **fuel–air ratio**
RT burning rate
combustion efficiency
compression ratio
gas mixtures
ignition limits
premixing
pressure ratio
volumetric efficiency

fueling
USE **refueling**

fuels
GS **fuels**
. chemical fuels
. . endothermic fuels
. . high energy fuels
. . hydrocarbon fuels
. . . diesel fuels
. . . fossil fuels
. . . . coal
. . . . . anthracite
. . . . . lignite
. . . . . solvent refined coal
. . . . crude oil
. . . . natural gas
. . . . . liquefied natural gas
. . . . peat
. . . gasoline
. . . jet engine fuels
. . . . JP-4 jet fuel
. . . . JP-5 jet fuel
. . . . JP-6 jet fuel
. . . . JP-7 jet fuel
. . . . JP-8 jet fuel
. . . synthane
. . liquid fuels
. . . aircraft fuels
. . . antimisting fuels
. . . automobile fuels
. . . diesel fuels
. . . gasoline
. . . hydrogen fuels
. . . jet engine fuels
. . . . JP-4 jet fuel
. . . . JP-5 jet fuel
. . . . JP-6 jet fuel
. . . . JP-7 jet fuel
. . . . JP-8 jet fuel
. . . kerosene
. . metal fuels
. . synthetic fuels
. . . gasohol (fuel)
. . . synthane
. clean fuels
. . fuel oils
. coke
. fissile fuels
. gaseous fuels
. . natural gas
. . . liquefied natural gas
. monopropellants
. . aerozine
. nuclear fuels
. . ceramic nuclear fuels
. . fissium
. . spent fuels
RT bioconversion
burning rate
charcoal
energy policy
energy storage
flames
fuel systems
fuel tanks
gases
hydrogen
hydrogen production
kerogen
liquid ammonia
liquid hydrogen
nuclear fuel elements
oils
operating costs
oxidizers
premixing
propellants
rocket propellants
shale oil
transportation energy

Fujita method
RT coordinates
∞ methodology
tornadoes
∞ transformations
transformations (mathematics)
wind velocity

full scale tests
RT altitude tests
engine tests
flight tests
ground tests

high altitude tests
∞ tests

fullerenes
(added August 1991)
DEF Molecules whose structure is similar to the shape of a soccer ball (polyhedron). The geodesic-dome-like molecular structure causes these molecules to be named after Buckminster Fuller, hence, "fullerene."
GS **fullerenes**
. **buckminsterfullerene**
RT atomic clusters
carbon
graphite
molecular clusters
polyatomic molecules
polyhedrons

fulminates
GS esters
. isocyanates
. . **fulminates**
nitrogen compounds
. cyano compounds
. . isocyanates
. . . **fulminates**
RT detonators
explosives
propellants

fumes
RT aerosols
dispersions
dust
exhaust gases
fire damage
gas mixtures
gases
haze detection
reaction products
smoke
smoke detectors
vapors
wastes

fumigation
RT antiseptics
bactericides
spraying
sterilization

function generators
GS signal generators
. **function generators**
RT ∞ generators
pulse generators
voltage generators
wave generation

function space
GS analysis (mathematics)
. **function space**
. . Banach space
. . . Hilbert space
. . . . Sobolev space
RT fibers (mathematics)
field theory (physics)
functions (mathematics)
orthogonal functions
quantum mechanics
series (mathematics)
∞ space
statistical mechanics
vectors (mathematics)

functional analysis
GS analysis (mathematics)
. **functional analysis**
. . Banach space
. . . Hilbert space
. . . . Sobolev space
. . convolution integrals
. . harmonic analysis
. . . tesseral harmonics
. . . zonal harmonics
. . integral equations
. . . Fredholm equations
. . . J integral
. . . singular integral equations
. . . Volterra equations
. . . Wiener Hopf equations
. . integral transformations
. . . Fourier transformation
. . . . fast Fourier transformations
. . . Fourier–Bessel transformations
. . . Hilbert transformation
. . . Laplace transformation
RT complex variables
form factors
functions (mathematics)
series (mathematics)
Walsh function

functional design specifications
DEF Those levels of design in which all subtasks are specified and their relationships defined so that the total collection of subsystems will perform the intended task of the entire system.
GS specifications
. **functional design specifications**
RT aeronautical engineering
∞ design
equipment specifications
missile design
product development
systems engineering

functional integration
GS analysis (mathematics)
. real variables
. . measure and integration
. . . **functional integration**
RT analog computers
differential equations
digital integrators
partial differential equations

functionally gradient materials
(added September 1992)
DEF Composite materials that consist of a gradual compositional variation from ceramic to metal from one surface to the other. These continuous changes result in property gradients which can be adjusted by controlling the composition. Used for FGM (materials).
UF *FGM (materials)*
GS composite materials
. **functionally gradient materials**
RT aircraft construction materials
airframe materials
anisotropic media
bimetals
ceramic matrix composites
combustion synthesis
composite structures
fiber composites
matrix materials
metal matrix composites
prepregs
spacecraft construction materials

functionals
RT ∞ functions
functions (mathematics)
integrals
∞ **functions**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT contralateral functions
functionals
functions (mathematics)
muscular function
parenteral functions
penalty function
pulmonary functions
renal function
scattering functions
work functions

functions (mathematics)
GS **functions (mathematics)**
. Abel function
. Airy function
. analytic functions
. . entire functions
. aperiodic functions
. asymptotes
. Boolean functions
. composite functions
. conformal mapping
. coordinate transformations
. delta function
. discrete functions
. discriminant analysis (statistics)
. distribution functions
. . probability distribution functions
. disturbing functions
. error functions
. Fourier transformation
. . fast Fourier transformations
. Fourier–Bessel transformations
. Fresnel integrals
. gamma function
. Green's functions
. Hamiltonian functions
. Hankel functions
. harmonic functions
. hyperbolic functions
. hypergeometric functions
. kernel functions
. Lagrangian function
. Laguerre functions
. Lame functions
. Laplace transformation
. Legendre functions
. Liapunov functions
. linear transformations
. Lorentz transformations
. Mathieu function
. Maxwell–Boltzmann density function
. Mellin transforms
. meromorphic functions
. . elliptic functions
. . rational functions
. monotone functions
. orthogonal functions
. . Walsh function
. orthonormal functions
. penalty function
. point spread functions
. Poisson density functions
. probability density functions
. . normal density functions
. . Pearson distributions
. . Rayleigh distribution
. . Weibull density functions
. ramp functions
. recursive functions
. Schwarz–Christoffel transformation

. shape functions
. space–time functions
. spherical harmonics
. spline functions
. step functions
. stress functions
. time functions
. transcendental functions
. . exponential functions
. . . logarithms
. . periodic functions
. . . trigonometric functions
. . . . cosine series
. . . . sine series
. . . . tangents
. transfer functions
. . loop transfer functions
. . modulation transfer function
. . optical transfer function
. weighting functions
. Whittaker functions
RT algebra
∞ applications of mathematics
branching (mathematics)
calculus
continuity (mathematics)
divergence
extremum values
function space
functional analysis
functionals
∞ functions
infinity
inflection points
linearity
mapping
mathematical logic
mathematical models
∞ mathematics
nonlinearity
number theory
numerical differentiation
operations research
operators (mathematics)
random variables
range (extremes)
∞ transformations
transformations (mathematics)
wavelet analysis

fungal diseases
SN (EXCLUDES PLANT DISEASES)
GS diseases
. infectious diseases
. . fungal diseases
RT dermatitis
fungi
respiratory diseases

fungi
GS plants (botany)
. fungi
. . Aspergillus
. . Coccomyces
. . gibberellins
. . neurospora
. . rhizopus
. . rust fungi
. . saccharomyces
. . yeast
RT blight
fungal diseases
lichens
microspores
mitra
∞ mold
panspermia
plant diseases
spores
thermophiles

fungicides
GS fungicides
. xanthines
. . caffeine
. . guanines
. . uric acid
RT antiinfectives and antibacterials
toxicology

funnels
RT conical inlets
∞ nozzles

furan resins
GS plastics
. synthetic resins
. . thermosetting resins
. . . furan resins
. . . . polyamide resins
. . . . . Kevlar (trademark)
. . . . . Nylon (trademark)
resins
. synthetic resins
. . thermosetting resins
. . . furan resins
. . . . polyamide resins
. . . . . Kevlar (trademark)
. . . . . Nylon (trademark)
RT adhesives
coatings

furans
DEF Organic heterocyclic compounds containing diunsaturated rings of four carbon atoms and one oxygen atom; also known as furfuran or tetrol.
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . furans
. . . . tetrahydrofuran
RT ∞ chemical compounds
plastics
solvents
thiophenes

furfuryl alcohol
RT aldehydes
∞ aromatic compounds

furlable antennas
GS antennas
. furlable antennas
RT communication equipment
folding structures
satellite antennas
space communication
spacecraft antennas

furnaces
SN (EXCLUDES DOMESTIC HEATING EQUIPMENT)
GS heating equipment
. furnaces
. . electric furnaces
. . image furnaces
. . solar furnaces
. . vacuum furnaces
RT boilers
burners
chemical engineering
chemical reactors
chimneys
combustion chambers
controlled atmospheres
∞ cupolas
drying apparatus
extraction
fluidized bed processors
foundries
hearths
heat treatment
incinerators
induction heating
mechanical engineering
melting
∞ metallurgy
mufflers
ovens
refractories
separators
sintering
waste energy utilization

fuselage mounting
USE aircraft production

fuselages
GS aircraft structures
. fuselages
RT aircraft construction materials
aircraft parts
airframes
bays (structural units)
body–wing and tail configurations
camber
centerbodies
cockpits
cylindrical bodies
hulls (structures)
wing–fuselage stores

∞ fuses
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT circuit breakers
circuit protection
electric fuses
fuses (ordnance)
warheads

fuses (ordnance)
RT ammunition
caps (explosives)
detonators
∞ fuses
initiators (explosives)
warheads
wicks

fusibility
GS thermodynamic properties
. thermophysical properties
. . fusibility
RT ∞ physical properties
∞ resistance
welding

fusiform shapes
USE cones

∞ fusion
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The combining of atoms and consequent release of energy.
RT fuel production
inertial fusion (reactor)
laser fusion
liquid–solid interfaces
nuclear fusion

fusion (melting)
GS phase transformations
. melting
. . fusion (melting)
RT adhesion
frit
fusion welding
heat of fusion
∞ joining
phase change materials

fusion heat
USE **heat of fusion**

fusion reactors
GS nuclear reactors
. fusion reactors
. . heliotrons
. . spheromaks
. . stellarators
RT beta factor
blankets (fusion reactors)
bumpy toruses
fusion–fission hybrid reactors
impact fusion
inertial fusion (reactor)
limiters (fusion reactors)
mirror fusion
nuclear fission
nuclear fusion
Q values (nuclear physics)
∞ reactors
tandem mirrors
thermal barriers (plasma control)

fusion weapons
UF *hydrogen bombs*
GS weapons
. nuclear weapons
. . fusion weapons
RT laser weapons
nuclear fusion

fusion welding
GS welding
. fusion welding
. . electric welding
. . . arc welding
. . . . gas tungsten arc welding
. . . . plasma arc welding
. . . electroslag welding
. . . flash welding
. . electron beam welding
. . gas welding
. . . brazing
. . . . low temperature brazing
. . laser welding
RT fusion (melting)
pressure welding
spot welds

fusion–fission hybrid reactors
GS nuclear reactors
. fusion–fission hybrid reactors
RT fusion reactors
nuclear fission
nuclear fusion
∞ reactors

fuzzy sets
DEF Mathematical models coupled with a provision for the effect of human factors and construction process and experience.
RT algorithms
fuzzy systems
set theory

fuzzy systems
DEF Systems that involve fuzzy sets.
RT algorithms
fuzzy sets
multisensor fusion
probability theory
set theory
system identification
∞ systems
systems analysis

FV-12A aircraft
GS attack aircraft
. fighter aircraft
. . FV-12A aircraft
V/STOL aircraft
. FV-12A aircraft
RT ∞ aircraft
∞ military aircraft

G

G force
USE **acceleration (physics)**

G stars
GS **celestial bodies**
. **stars**
. . **G stars**
. . . **sun**
RT **dwarf stars**
F stars
giant stars
main sequence stars
stellar spectra

G–1 aircraft
UF *Navion G–1 aircraft*
Navion Rangemaster aircraft
Rangemaster aircraft
GS **general aviation aircraft**
. **G–1 aircraft**
light aircraft
. **G–1 aircraft**
monoplanes
. **G–1 aircraft**
Navion aircraft
. **G–1 aircraft**
passenger aircraft
. **G–1 aircraft**
transport aircraft
. **G–1 aircraft**
RT ∞ **aircraft**

G–91 aircraft
UF *Fiat G–91 aircraft*
GS **attack aircraft**
. **fighter aircraft**
. . **G–91 aircraft**
Fiat aircraft
. **G–91 aircraft**
jet aircraft
. **G–91 aircraft**
monoplanes
. **G–91 aircraft**
RT ∞ **aircraft**

G–95/4 aircraft
UF *Fiat G–95/4 aircraft*
GS **attack aircraft**
. **fighter aircraft**
. . **G–95/4 aircraft**
Fiat aircraft
. **G–95/4 aircraft**
jet aircraft
. **G–95/4 aircraft**
monoplanes
. **G–95/4 aircraft**
supersonic aircraft
. **G–95/4 aircraft**
V/STOL aircraft
. **G–95/4 aircraft**
RT ∞ **aircraft**

G–222 aircraft
UF *Fiat G–222 aircraft*
GS **Fiat aircraft**
. **G–222 aircraft**
jet aircraft
. **turboprop aircraft**
. . **G–222 aircraft**
monoplanes
. **G–222 aircraft**
passenger aircraft
. **G–222 aircraft**
transport aircraft
. **G–222 aircraft**
V/STOL aircraft
. **G–222 aircraft**
RT ∞ **aircraft**

GA–5 aircraft
UF *Gloster GA–5 aircraft*
Javelin aircraft
GS **attack aircraft**
. **fighter aircraft**
. . **GA–5 aircraft**
Hawker Siddeley aircraft
. **GA–5 aircraft**
jet aircraft
. **GA–5 aircraft**
monoplanes
. **GA–5 aircraft**
RT ∞ **aircraft**
delta wings

gabbro
GS **rocks**
. **igneous rocks**
. . **gabbro**
RT **anorthosite**
lunar rocks

Gabon
GS **nations**
. **Gabon**
RT **Africa**

gadolinium
GS **chemical elements**
. **rare earth elements**
. . **gadolinium**
. . . **gadolinium isotopes**
metals
. **rare earth elements**
. . **gadolinium**
. . . **gadolinium isotopes**
RT **gadolinium–gallium garnet**

gadolinium alloys
DEF Mixtures of gadolinium, a rare earth metal, with other metals.
GS **alloys**
. **rare earth alloys**
. . **gadolinium alloys**
RT **metals**

gadolinium isotopes
GS **chemical elements**
. **nuclides**
. . **isotopes**
. . . **gadolinium isotopes**
. **rare earth elements**
. . **gadolinium**
. . . **gadolinium isotopes**
metals
. **rare earth elements**
. . **gadolinium**
. . . **gadolinium isotopes**

gadolinium–gallium garnet
(added August 1990)
DEF A semiconducting crystalline compound used primarily as a solid–state laser material.
UF *GGG (garnet)*
GS **gallium compounds**
. **gadolinium–gallium garnet**
minerals
. **garnets**
. . **gadolinium–gallium garnet**
silicon compounds
. **silicates**
. . **garnets**
. . . **gadolinium–gallium garnet**
RT **doped crystals**
eclogite
ferrites
gadolinium
laser materials
lasers
magnetostatic amplifiers
semiconductor lasers
semiconductors (materials)

gages
USE **measuring instruments**

Gaia hypothesis
(added June 1990)
DEF The hypothesis that the Earth's atmosphere, biosphere, and its living organisms behave as a single system striving to maintain a stability conducive to the existance of life.
RT **atmospheric composition**
atmospheric temperature
biochemistry
biological evolution
biosphere
ecology
ecosystems
greenhouse effect

gain (amplification)
USE **amplification**

galactic bulge
(added August 1988)
UF *central bulge (galaxies)*
nuclear bulge (galaxies)
RT **galactic nuclei**
galactic structure
galaxies
Milky Way Galaxy
spiral galaxies
x ray sources

galactic clusters
SN (RESTRICTED TO CLUSTERS OF GALAXIES; EXCLUDES OPEN CLUSTERS)
UF *galaxy groups*
GS **celestial bodies**
. **galactic clusters**
. . **local group (astronomy)**
. . **Virgo galactic cluster**
RT **agglomeration**
∞ **clusters**
cooling flows (astrophysics)
disk galaxies
elliptical galaxies
metallicity
missing mass (astrophysics)
star clusters
star distribution
stellar systems

galactic cosmic rays
DEF Energetic particles that come from outside the solar systems. They generally come from within our galaxy.
GS **extraterrestrial radiation**
. **galactic radiation**
. . **galactic cosmic rays**
ionizing radiation
. **cosmic rays**
. . **galactic cosmic rays**
RT **energetic particles**

galactic winds
solar activity effects
solar wind

galactic evolution
UF *galaxy formation*
GS evolution (development)
. **galactic evolution**
RT astrophysics
big bang cosmology
cooling flows (astrophysics)
cosmology
dark matter
disk galaxies
galactic mass
gravitational instability
ring galaxies
star distribution
star formation rate
stellar evolution
stellar mass accretion

galactic halos
(added December 1992)
DEF The tenuous, spherical cloud surrounding spiral galaxies. It is the locus of old stars and globular clusters. Halos appear to be required, at least to some extent, for the stability of disk galaxies.
RT dark matter
disk galaxies
galactic structure
globular clusters
halos
intergalactic media
interstellar gas
missing mass (astrophysics)
molecular clouds
spiral galaxies
star distribution

galactic magnetic fields
USE **interstellar magnetic fields**

galactic mass
DEF The total amount of matter contained in a galaxy.
GS mass
. **galactic mass**
RT galactic evolution
galactic structure
mass distribution
stellar mass

galactic nuclei
GS **galactic nuclei**
. active galactic nuclei
RT absorption spectra
accretion disks
active galaxies
disk galaxies
galactic bulge
radio jets (astronomy)
radio sources (astronomy)
Seyfert galaxies
starburst galaxies

galactic radiation
GS extraterrestrial radiation
. **galactic radiation**
. . galactic cosmic rays
. . galactic radio waves
. . . North Polar Spur (astronomy)
. . galactic winds
RT active galactic nuclei
active galaxies
brightness distribution
corpuscular radiation
cosmic noise
cosmic rays
cosmic x rays
electromagnetic radiation
gamma ray astronomy
gamma ray bursts
gamma ray sources (astronomy)
Hubble diagram
infrared cirrus (astronomy)
interstellar radiation
irregular galaxies
mass to light ratios
nonthermal radiation
∞ radiation
radiative transfer
Solar Radiation 1 satellite
Solar Radiation 3 satellite
stellar radiation
Uhuru satellite

Galactic Radiation Exp Background sats
USE **GREB satellites**

galactic radio waves
DEF Radio waves emanating from our galaxy.
GS electromagnetic radiation
. radio waves
. . extraterrestrial radio waves
. . . **galactic radio waves**
. . . . North Polar Spur (astronomy)
extraterrestrial radiation
. extraterrestrial radio waves
. . **galactic radio waves**
. . . North Polar Spur (astronomy)
. galactic radiation
. . **galactic radio waves**
. . . North Polar Spur (astronomy)
RT cosmic noise
radio jets (astronomy)

galactic rotation
GS gyration
. rotation
. . **galactic rotation**
RT corotation
disk galaxies
hydrogen clouds
irregular galaxies
stellar motions
stellar systems
velocity distribution

galactic structure
RT barred galaxies
compact galaxies
corotation
density wave model
disk galaxies
galactic bulge
galactic halos
galactic mass
galaxies
interacting galaxies
irregular galaxies
missing mass (astrophysics)
peculiar galaxies
ring galaxies
shell galaxies
stellar systems
∞ structures

galactic winds
(added May 1994)
GS extraterrestrial radiation
. galactic radiation
. . **galactic winds**
RT galactic cosmic rays
space plasmas
stellar winds

galactose
GS organic compounds
. carbohydrates
. . sugars
. . . monosaccharides
. . . . hexoses
. . . . . **galactose**

Galatea
(added July 1995)
DEF A natural satellite of Saturn, orbiting at a mean distance of 62,000 kilometers.
GS celestial bodies
. natural satellites
. . Neptune satellites
. . . **Galatea**
RT Neptune (planet)

galaxies
DEF Vast assemblages of stars or nebulae, composing island universes separated from other such assemblages by great distances.
GS celestial bodies
. **galaxies**
. . active galaxies
. . . Markarian galaxies
. . . radio galaxies
. . . Seyfert galaxies
. . compact galaxies
. . disk galaxies
. . dwarf galaxies
. . elliptical galaxies
. . interacting galaxies
. . irregular galaxies
. . Maffei galaxies
. . Magellanic clouds
. . peculiar galaxies
. . ring galaxies
. . shell galaxies
. . spiral galaxies
. . . Andromeda Galaxy
. . . barred galaxies
. . . Milky Way Galaxy
. . starburst galaxies
. . Virgo galactic cluster
RT BL Lacertae objects
faint objects
galactic bulge
galactic structure
Gum nebula
Hubble constant
Hubble diagram
metallicity
nebulae
Orion nebula
quasars
radio sources (astronomy)
red shift
star clusters
star formation rate
stars
stellar systems

Galaxy aircraft
USE **C-5 aircraft**

galaxy formation
USE **galactic evolution**

galaxy groups
USE **galactic clusters**

galaxy interaction
USE **interacting galaxies**

Galerkin method
RT linearization
∞ methodology

Galilean satellites
DEF The four largest and brightest satellites of Jupiter (Io, Europa, Ganymede, and Callisto).
GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . **Galilean satellites**
. . . . Callisto
. . . . Europa
. . . . Ganymede
. . . . Io
RT Charon
Galileo project
Galileo spacecraft
icy satellites
Jupiter (planet)
Triton

Galileo mission
USE **Galileo project**

Galileo probe
DEF The NASA Jupiter atmospheric entry probe to be deployed from the Galileo spacecraft. The probe will make in situ measurements while descending from a parachute.
GS interplanetary spacecraft
. Jupiter probes
. . **Galileo probe**
unmanned spacecraft
. space probes
. . Jupiter probes
. . . **Galileo probe**
RT Jupiter (planet)
∞ probes
∞ spacecraft

Galileo project
DEF A NASA program to probe Jupiter, its environment and natural satellites. The spacecraft was placed in Earth orbit by the Space Transportation System (STS) on October 18, 1989. Used for Galileo mission.
UF *Galileo mission*
GS programs
. NASA programs
. . NASA space programs
. . . **Galileo project**
. projects
. . **Galileo project**
. space programs
. . NASA space programs
. . . **Galileo project**
RT Amphitrite asteroid
atmospheric entry
flyby missions
Galilean satellites
Jupiter atmosphere
Jupiter probes

Galileo spacecraft
DEF A NASA orbiter spacecraft which will carry the Galileo probe and, following deployment at Jupiter, will become an orbiting platform for remote sensing of Jupiter and its satellites.
GS interplanetary spacecraft
. Jupiter probes
. . **Galileo spacecraft**
unmanned spacecraft
. space probes
. . Jupiter probes
. . . **Galileo spacecraft**
RT flyby missions
Galilean satellites
Gaspra asteroid
Ida asteroid
Jupiter (planet)
∞ missions
∞ spacecraft

gall
RT digestive system
gastrointestinal system
secretions

gallamine triethiodide
GS amines
. **gallamine triethiodide**
ethers
. **gallamine triethiodide**
halogen compounds
. iodine compounds
. . iodides
. . . **gallamine triethiodide**

gallates
GS gallium compounds
. **gallates**
. . sodium gallates

gallium
GS chemical elements
. **gallium**
. . gallium isotopes
metals
. **gallium**
. . gallium isotopes

gallium alloys
GS alloys
. **gallium alloys**
RT aluminum alloys
indium alloys
superconductivity

gallium antimonides
GS antimony compounds
. antimonides
. . **gallium antimonides**
gallium compounds
. **gallium antimonides**

gallium arsenide lasers
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . semiconductor lasers
. . . . **gallium arsenide lasers**
. . solid state lasers
. . . **gallium arsenide lasers**
stimulated emission devices
. **lasers**
. . semiconductor lasers
. . . **gallium arsenide lasers**
. . solid state lasers
. . . **gallium arsenide lasers**
RT aluminum gallium arsenide lasers
injection lasers
stimulated emission
waveguide lasers

gallium arsenides
GS arsenic compounds
. **arsenides**
. . **gallium arsenides**
. . . aluminum gallium arsenides
. . . indium gallium arsenides
gallium compounds
. **gallium arsenides**
. . aluminum gallium arsenides
. . indium gallium arsenides
RT antisite defects
Bragg reflectors
Gunn diodes
heterojunction devices
injection lasers
MODFETS
negative conductance
negative electron affinity
negative resistance devices
Schottky diodes
semiconductor lasers
superlattices
transferred electron devices

gallium compounds
GS **gallium compounds**
. gadolinium-gallium garnet
. gallates
. . sodium gallates
. gallium antimonides
. gallium arsenides
. . aluminum gallium arsenides
. . indium gallium arsenides
. gallium nitrides
. gallium oxides
. gallium phosphides
. gallium selenides
RT ∞ chemical compounds
Group 3A compounds
∞ metal compounds

gallium isotopes
GS chemical elements
. gallium
. . **gallium isotopes**
. nuclides
. . isotopes
. . . **gallium isotopes**
metals
. gallium
. . **gallium isotopes**

gallium nitrides
GS gallium compounds
. **gallium nitrides**
nitrogen compounds
. nitrides
. . metal nitrides
. . . **gallium nitrides**
RT semiconductors (materials)

gallium oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **gallium oxides**
gallium compounds
. **gallium oxides**

gallium phosphides
GS gallium compounds
. **gallium phosphides**
phosphorus compounds
. phosphides
. . **gallium phosphides**

gallium selenides
GS chalcogenides
. **selenides**
. . **gallium selenides**
gallium compounds
. **gallium selenides**
selenium compounds
. selenides
. . **gallium selenides**

galvanic cells
USE **electrolytic cells**

galvanic skin response
UF *electrodermal response*
GS **responses**
. **galvanic skin response**
RT **electrical resistance**
lies

galvanizing
USE **zinc coatings**

galvanomagnetic effects
UF *galvanomagnetism*
GS **galvanomagnetic effects**
. Nernst–Ettingshausen effect
RT ∞ effects
Hall effect

galvanomagnetism
USE **galvanomagnetic effects**

galvanometers
GS measuring instruments
. **galvanometers**
RT ammeters
electrometers
micromilliammeters
millivoltmeters
thermocouple pyrometers

Gambia
GS nations
. **Gambia**
RT Africa

game theory
DEF Application of mathematics to a game, business situation, or other problem to maximize gain or minimize loss.
GS **game theory**
. saddle points (game theory)
RT decision theory
deployment
information theory
linear programming
martingales
mathematical models
mathematical programming
minimax technique
Monte Carlo method
operations research
probability theory
risk
saddle points
simulation
statistical analysis
statistical decision theory
stochastic processes
strategy
∞ theories
war games

gametocytes
UF *oocytes*
spermatocytes
GS cells (biology)
. **gametocytes**
. . eggs
. . spermatozoa
RT spermatogenesis

gamma function
GS analysis (mathematics)
. complex variables
. . **gamma function**
functions (mathematics)
. **gamma function**
RT factorials
statistical distributions

gamma globulin
GS antibodies
. **gamma globulin**
biopolymers
. proteins
. . globulins
. . . **gamma globulin**
organic compounds
. proteins
. . globulins
. . . **gamma globulin**

gamma radiation
USE **gamma rays**

gamma ray absorptiometry
GS density measurement
. **gamma ray absorptiometry**
RT absorption spectra
densitometers
electromagnetic absorption
energy absorption
∞ measurement
photon absorptiometry
radiation absorption

gamma ray absorption
GS energy absorption
. radiation absorption
. . electromagnetic absorption
. . . **gamma ray absorption**
RT ∞ absorption
electromagnetic properties
electromagnetic radiation
ionizing radiation
nuclear radiation
photon absorptiometry

gamma ray astronomy
DEF Astronomy based on the detection of gamma ray emission and interactions from supernova remnants, neutron stars, flare stars, galactic core and disc, black holes, etc.
GS astronomy
. **gamma ray astronomy**
RT astrophysics
cosmic x rays
energy spectra
galactic radiation
gamma ray bursts
gamma ray sources (astronomy)
gamma ray telescopes
Granat satellite
HEAO 4
radio astronomy
x ray astronomy

Gamma Ray Astronomy Explorer
USE **Explorer 11 satellite**

gamma ray beams
GS beams (radiation)
. **gamma ray beams**
electromagnetic radiation
. **gamma ray beams**
ionizing radiation
. **gamma ray beams**
nuclear radiation
. **gamma ray beams**
RT photon beams
radioactive decay

gamma ray bursts
DEF Short (about 0.1 – 4 sec.) intense low-energy (about 0.1 – 1.2 MeV) bursts recorded by the Vela satellite system in 1967. Their isotropic distribution suggests an extragalactic origin, but a galactic disk origin cannot be ruled out. Used for cosmic gamma ray bursts.
UF *cosmic gamma ray bursts*
GS bursts
. **gamma ray bursts**
electromagnetic radiation
. gamma rays
. . **gamma ray bursts**
extraterrestrial radiation
. **gamma ray bursts**
ionizing radiation
. cosmic rays
. . **gamma ray bursts**
. gamma rays
. . **gamma ray bursts**
nuclear radiation
. gamma rays
. . **gamma ray bursts**
RT big bang cosmology
bremsstrahlung
Cerenkov radiation
cosmic x rays
galactic radiation
gamma ray astronomy
interstellar radiation
nuclear particles
radiant flux density
starquakes
stellar radiation
x ray astronomy

gamma ray lasers
DEF Stimulated emission devices producing coherent gamma radiation.
GS stimulated emission devices
. lasers
. . **gamma ray lasers**
RT coherent light
light transmission
optical pumping
pulsed radiation

Gamma Ray Observatory
DEF A late 1980s NASA mission to explore the gamma ray window to the universe from 0.06 MeV to 30 GeV.
UF *Compton Gamma Ray Observatory*
GS **artificial satellites**
. **scientific satellites**
. . astronomical satellites
. . . **Gamma Ray Observatory**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Gamma Ray Observatory**
RT gamma ray telescopes
OGO
spaceborne astronomy
spaceborne telescopes

gamma ray sources (astronomy)
(added October 1997)
SN (LIMITED TO ASTRONOMICAL SOURCES; EXCLUDES RADIATION DEVICES)
RT **COS–B satellite**
galactic radiation
gamma ray astronomy
pulsars
radio sources (astronomy)
x ray sources

gamma ray spectra
DEF The energy distribution of gamma rays emitted by nuclei.
GS spectra
. radiation spectra

. . electromagnetic spectra
. . . gamma ray spectra
RT emission spectra
ionizing radiation

gamma ray spectrometers
DEF Instruments for deriving the physical constants of materials by using induced gamma radiation as the emission source.
GS measuring instruments
. spectrometers
. . gamma ray spectrometers
RT optical measurement
scintillating fibers
Solar Maximum Mission
spectra
spectrum analysis

gamma ray telescopes
DEF Special telescopes for the observation (and recording) of astronomical phenomena in the gamma ray spectrum.
GS telescopes
. gamma ray telescopes
RT cosmic rays
gamma ray astronomy
Gamma Ray Observatory
scintillating fibers

gamma rays
SN (EMITTED BY NUCLEI)
DEF Quantums of electromagnetic radiation emitted by nuclei, each such photon being emitted as the result of a quantum transition between two energy levels of the nucleus. Gamma rays have energies usually between 10 thousand electron volts and 10 million electron volts with correspondingly short wavelengths and high frequencies. Used for gamma radiation.
UF *gamma radiation*
GS electromagnetic radiation
. gamma rays
. . gamma ray bursts
ionizing radiation
. gamma rays
. . gamma ray bursts
nuclear radiation
. gamma rays
. . gamma ray bursts
RT bremsstrahlung
Cerenkov radiation
cosmic rays
cosmic x rays
decay
emission spectra
flux (rate)
flux density
monochromatic radiation
Mossbauer effect
photomagnetic effects
photons
∞ radiation
radiation effects
radiation shielding
radioactive decay
radioactivity
∞ rays
scintillating fibers
transverse oscillation
transverse waves
x rays

gangila
GS anatomy
. nervous system
. . nerves
. . . gangila
RT cells (biology)
neuroglia
neurophysiology

gantries
USE **gantry cranes**

gantry cranes
DEF Large cranes mounted on platforms that usually run back and forth on parallel tracks astride the work area. Used for gantries.
UF *gantries*
GS handling equipment
. cranes
. . gantry cranes
RT ground support equipment
launching pads
launching sites
umbilical towers

Ganymede
DEF A satellite of Jupiter orbiting at a mean distance of 1,071,000 kilometers. Also called Jupiter III.
GS celestial bodies
. natural satellites
. . icy satellites
. . . Ganymede
. . Jupiter satellites
. . . Galilean satellites
. . . . Ganymede
RT Callisto
Charon
Io
Jupiter (planet)

GAP (propellants)
USE **glycidyl azide polymer**

gaps
GS gaps
. energy gaps (solid state)
. spark gaps
RT ∞ arresters
∞ breakdown
crack opening displacement
∞ holes
openings
orifices
passageways
quantum wells
∞ tunnels

gaps (geology)
DEF Ravines or gorges cut deeply through a mountain ridge, or between hills or mountains. Used for cols and passes.
UF *cols*
passes
GS geology
. gaps (geology)
landforms
. gaps (geology)
RT mountains
∞ ridges

garbage
GS wastes
. garbage
RT composting
organic wastes (fuel conversion)
sewers
solid wastes
utilities
waste disposal
waste treatment

garments
GS clothing
. garments
RT flight clothing
suits
vests

garnets
DEF Groups of minerals that are silicates of cubic crystalline form.
GS minerals
. garnets
. . gadolinium–gallium garnet
. . yttrium–aluminum garnet
. . yttrium–iron garnet
silicon compounds
. silicates
. . garnets
. . . gadolinium–gallium garnet
. . . yttrium–aluminum garnet
. . . yttrium–iron garnet
RT eclogite
lasers

GARP
USE **Global Atmospheric Research Program**

GARP Atlantic Tropical Experiment
UF *GATE (experiment)*
GS programs
. Global Atmospheric Research Program
. . GARP Atlantic Tropical Experiment
RT Atlantic Ocean
intertropical convergent zones
meteorology
NASA programs
oceanography
tropical meteorology
tropical regions
weather forecasting

gas analysis
GS chemical tests
. chemical analysis
. . gas analysis
. . . ozonometry
. . . Van Slyke method
RT air sampling
flame probes
Hopcalite (trademark)
mass spectrometers
∞ materials tests
oxygen analyzers
qualitative analysis
quantitative analysis
volumetric analysis

gas atomization
DEF Atomization of fluids by high velocity gas jets.
GS atomizing
. gas atomization
RT aerosols
collisions
comminution
liquid atomization
particles

gas bags
GS bags
. gas bags
expandable structures
. inflatable structures
. . gas bags
RT balloons

high altitude balloons

gas bearings
UF *air bearings*
gas lubricated bearings
GS bearings
. **gas bearings**
RT antifriction bearings
fluid films
foil bearings
high temperature lubricants
squeeze films
thrust bearings
turbine engines

gas chromatography
DEF A method of chemical analysis involving the separation of volatile constituents of a mixture by means of gas flow entrainment, vapor pressure differences, and affinity of specific compounds for various liquids or solid materials.
GS chemical tests
. chemical analysis
. . chromatography
. . . **gas chromatography**
RT adsorption
paper chromatography
sorption
thin layer chromatography

gas composition
GS composition (property)
. **gas composition**
. . carbon dioxide concentration
RT atmospheric composition
atom concentration
chemical composition
Dalton law
expired air
ionospheric composition
plasma composition
polar gases

gas cooled fast reactors
GS nuclear reactors
. fast nuclear reactors
. . **gas cooled fast reactors**
. gas cooled reactors
. . **gas cooled fast reactors**

gas cooled reactors
UF *GCR (reactors)*
GS nuclear reactors
. **gas cooled reactors**
. . experimental gas cooled reactors
. . gas cooled fast reactors
. . high temperature nuclear reactors
. . . high temperature gas cooled reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . KIWI B–1 Reactor
. . . . KIWI B–4 Reactor
. . Tory 2 reactor
. . Tory 2–A reactor
. . Tory 2–C reactor
RT ∞ gas reactors

gas cooling
SN (COOLING WITH GAS)
GS cooling
. **gas cooling**
RT coolants
freon
heat exchangers

gas density
GS density (mass/volume)
. **gas density**
RT atom concentration
buoyancy
convective flow
gaseous diffusion
ideal gas
probability density functions
rarefied gases
real gases

gas detectors
RT detection
∞ detectors
haze detection
identifying
indicating instruments
monitors
∞ probes
∞ sensors
smoke detectors
warning systems

gas diffusion
USE **gaseous diffusion**

gas discharge counters
USE **counters**
gas discharge tubes

gas discharge tubes
DEF Evacuated enclosures containing a gas at low pressure that permits the passage of electricity through the gas upon application of sufficient voltage. Note: The tubes are usually provided with metal electrodes, but one form permits an electrodeless discharge with induced voltage. Used for discharge tubes and gas discharge counters.
UF *discharge tubes*
gas discharge counters
GS electron tubes
. **gas discharge tubes**
. . ignitrons
. . thyratrons
RT Faraday dark space
∞ gas tubes
microwave equipment
microwave oscillators
microwave tubes
phototubes
radiation counters

gas discharges
GS electric current
. electric discharges
. . Townsend discharge
. . . **gas discharges**
. . . . toroidal discharge
. . . . . ring discharge
RT afterglows
cold cathode tubes
cold cathodes
electric arcs
electric sparks
electrodeless discharges
electron avalanche
glow discharges
lightning
polar gases

gas dissociation
GS dissociation
. **gas dissociation**
RT thermal dissociation

gas dynamics
GS fluid mechanics
. fluid dynamics
. . **gas dynamics**
. . . aerodynamics
. . . . aerothermodynamics
. . . . hypersonics
. . . . rotor aerodynamics
. . . . supersonics
. . . . unsteady aerodynamics
. . . interactional aerodynamics
. . . rarefied gas dynamics
RT Dalton law
∞ dynamics
gas path analysis
gaseous diffusion
gaseous self–diffusion
gases
hydrodynamic equations
hydrodynamics
jet membrane process
kinetics
Lorentz gas
magnetohydrodynamics
∞ mechanics (physics)
molecular gases
polar gases
thermodynamics

gas evacuating
USE **evacuating (vacuum)**

gas evolution
GS evolution (liberation)
. **gas evolution**
RT degassing
outgassing
transpiration

gas exchange
GS exchanging
. **gas exchange**
RT oxygen production

gas expansion
GS expansion
. **gas expansion**
RT Joule–Thomson effect
pressure reduction

gas explosions
GS explosions
. chemical explosions
. . **gas explosions**
RT detonable gas mixtures
detonation waves
flame propagation
flammable gases
underground explosions

gas flow
UF *gaseous cavitation*
GS fluid flow
. **gas flow**
. . air flow
. . . air currents
. . . . jet streams (meteorology)
. . . . meridional flow
. . . . vertical air currents
. . continuum flow
. . cooling flows (astrophysics)
. . equilibrium flow
. . . frozen equilibrium flow
. . . shifting equilibrium flow
. . free molecular flow
. . Knudsen flow
. . molecular flow
. . . slip flow
. . . transition flow
. . nonequilibrium flow

. . pipe flow
RT air ducts
air jets
compressible flow
critical flow
Crocco–Lee theory
gas path analysis
gasdynamic lasers
gaseous diffusion
gases
geophysical fluid flow cells
hydraulic analogies
hypersonic flow
incompressible flow
inviscid flow
Joule–Thomson effect
laminar flow
liquid flow
magnetohydrodynamic flow
mass flow
molecular relaxation
molecular trajectories
multiphase flow
nonuniform flow
orifice flow
∞ pressure drop
radial flow
single–phase flow
steady flow
steam flow
streams
subcritical flow
subsonic flow
supercritical flow
supersonic flow
supersonic jet flow
transonic flow
turbulent flow
two phase flow
uniform flow
unsteady flow
vapor jets
viscous flow

gas generator engines
USE **engines**
gas generators

gas generators
DEF A device used to generate gases in the laboratory; a chemical plant for producing gas from coal, for example, water gas. Used for gas generator engines.
UF *gas generator engines*
RT chemical reactors
∞ generators
pneumatic equipment
pressurizing
vaporizers

gas giant planets
DEF The giant planets, Jupiter, Saturn, Uranus, and Neptune, of our solar system.
GS celestial bodies
. planets
. . **gas giant planets**
. . . Jupiter (planet)
. . . Neptune (planet)
. . . Saturn (planet)
. . . Uranus (planet)
RT extrasolar planets
Jupiter red spot
Neptune atmosphere
planetary composition
Saturn rings
solar system
Uranus atmosphere

gas guns
GS **gas guns**
. light gas guns
RT atmospheric entry
ballistics
∞ guns
hypervelocity guns
wind tunnels

gas heating
GS **heating**
. **gas heating**
RT arc heating
kinetic heating
plasma heating
radiant heating
resistance heating
thermal diffusion

gas injection
GS injection
. fluid injection
. . **gas injection**
RT formations
fuel injection
inflating
perforating
plasma pumping
porosity
pressurizing
stimulation
water injection

gas ionization
GS ionization
. **gas ionization**
. . atmospheric ionization
. . . auroral ionization
. . flame ionization
RT afterglows
electron attachment
helium afterglow
ionized gases
ionizers
Penning discharge
Penning effect
photoionization
plasma display devices
ring discharge

gas jets
GS fluid jets
. **gas jets**
RT air jets
cold gas
∞ jets

gas lasers
GS stimulated emission devices
. lasers
. . **gas lasers**
. . . carbon dioxide lasers
. . . carbon monoxide lasers
. . . DF lasers
. . . excimer lasers
. . . HCL lasers
. . . . HCL argon lasers
. . . HCN lasers
. . . helium–neon lasers
. . . HF lasers
. . . nitrogen lasers
. . . rare gas–halide lasers
. . . . krypton fluoride lasers
. . . . xenon chloride lasers
. . . . xenon fluoride lasers
. . . TEA lasers
. . . ultraviolet lasers
RT carbon lasers
chemical lasers
electron pumping
gasdynamic lasers
infrared lasers
Mach–Zehnder interferometers
molecular oscillations
nuclear pumping
organic lasers
polar gases
pulsed lasers
Q switched lasers
stimulated emission
water masers

gas liquefaction
USE **condensing**

gas lubricants
GS lubricants
. **gas lubricants**
RT gaseous diffusion
high temperature lubricants
metal–gas systems
solid lubricants
squeeze films

gas lubricated bearings
USE **gas bearings**

gas masers
GS stimulated emission devices
. masers
. . **gas masers**
. . . hydrogen masers
RT argon lasers
atomic clocks
carbon dioxide lasers
frequency standards
interstellar masers
polar gases
stimulated emission
TEA lasers
water masers

gas meters
GS measuring instruments
. flowmeters
. . **gas meters**
RT flow measurement
Venturi tubes

gas mixtures
GS gases
. **gas mixtures**
. . air
. . . alveolar air
. . . compressed air
. . . expired air
. . . high temperature air
. . . liquid air
. . detonable gas mixtures
mixtures
. solutions
. . **gas mixtures**
. . . air
. . . . alveolar air
. . . . compressed air
. . . . expired air
. . . . high temperature air
. . . . liquid air
. . . detonable gas mixtures
RT argon–oxygen atmospheres
∞ atmospheres
binary fluids
binary mixtures
controlled atmospheres
eudiometers
exhaust gases

fuel–air ratio
fumes
gaseous rocket propellants
helium–oxygen atmospheres
hydrogen–based energy
ignition limits
laminar mixing
Lighthill gas model
liquefied gases
liquid–gas mixtures
mixing ratios
premixed flames
premixing

gas path analysis
DEF Mathematical process of determining overall engine performance, individual module performances and sensor performances from any specific set of engine related measurements.
RT gas dynamics
gas flow

gas phase
USE vapor phases

gas pipes
GS pipes (tubes)
. gas pipes
RT ∞ gas tubes

gas pockets
RT cavities
evacuating (vacuum)

gas pressure
GS pressure
. gas pressure
RT atmospheric pressure
compressed gas
internal pressure
partial pressure

∞ **gas reactors**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT chemical reactors
gas cooled reactors
gaseous fission reactors

gas recovery
GS reclamation
. materials recovery
. . gas recovery
RT energy technology
exhaust gases
gaseous diffusion
gases
∞ recovery
wastes

gas spectroscopy
GS spectroscopy
. gas spectroscopy
RT chemical analysis
chemical tests
flame spectroscopy
magnetic spectroscopy
mass spectroscopy
optogalvanic spectroscopy
spectroscopic analysis
vacuum spectroscopy
visible spectrum

gas streams
GS gases
. gas streams
streams
. gas streams
RT jet flow
laminar flow
turbulence
wind tunnels

gas temperature
GS temperature
. gas temperature
RT atmospheric temperature
inlet temperature
ionized gases
rarefied gases
shock tubes
shock waves
temperature measurement

gas transport
SN (ENCOMPASSES GAS DYNAMICS—EXCLUDES MATERIALS HANDLING)
RT energy transfer
gaseous diffusion
heat transfer
kinetic theory
Lighthill gas model
magnetohydrodynamics
mass transfer
pollution transport
transport theory

∞ **gas tubes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cold cathode tubes
gas discharge tubes
gas pipes
trigatrons

gas tungsten arc welding
UF *TIG welding*
tungsten inert gas welding
GS welding
. fusion welding
. . electric welding
. . . arc welding
. . . . gas tungsten arc welding
RT heat affected zone

gas turbine engines
GS engines
. air breathing engines
. . gas turbine engines
. . . hydrogen engines
. . . jet engines
. . . . ramjet engines
. . . . . integral rocket ramjets
. . . . . low volume ramjet engines
. . . . . pulsejet engines
. . . . . supersonic combustion ramjet engines
. . . . . turboramjet engines
. . . . turbojet engines
. . . . . Bristol–Siddeley Olympus 593 engine
. . . . . Bristol–Siddeley Viper engine
. . . . . ducted fan engines
. . . . . J–33 engine
. . . . . J–34 engine
. . . . . J–47 engine
. . . . . J–52 engine
. . . . . J–57 engine
. . . . . J–58 engine
. . . . . J–65 engine
. . . . . J–69–T–25 engine
. . . . . J–71 engine
. . . . . J–73 engine
. . . . . J–75 engine
. . . . . J–79 engine
. . . . . J–85 engine
. . . . . J–93 engine
. . . . . RA–28 engine
. . . . . turbofan engines
. . . . . Bristol–Siddeley BS 53 engine
. . . . . CF–700 engine
. . . . . convertible fan–shaft engines
. . . . . J–97 engine
. . . . . TF–30 engine
. . . . . TF–34 engine
. . . . . TF–41 engine
. . . . . turboprop engines
. . . . . T–34 engine
. . . . . T–38 engine
. . . . . T–53 engine
. . . . . T–55 engine
. . . . . T–56 engine
. . . . . T–63 engine
. . . . . T–64 engine
. . . . . T–74 engine
. . . . . T–76 engine
. . . . . T–78 engine
. . . . . turboramjet engines
. . . T–58 engine
. internal combustion engines
. . gas turbine engines
. . . hydrogen engines
. . . jet engines
. . . . ramjet engines
. . . . . integral rocket ramjets
. . . . . low volume ramjet engines
. . . . . pulsejet engines
. . . . . supersonic combustion ramjet engines
. . . . . turboramjet engines
. . . . turbojet engines
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. . . . . turboramjet engines

. . . T–58 engine
. turbine engines
. . **gas turbine engines**
. . . hydrogen engines
. . . jet engines
. . . . ramjet engines
. . . . . integral rocket ramjets
. . . . . low volume ramjet engines
. . . . . pulsejet engines
. . . . . supersonic combustion ramjet engines
. . . . . turboramjet engines
. . . . turbojet engines
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. . . . . J–75 engine
. . . . . J–79 engine
. . . . . J–85 engine
. . . . . J–93 engine
. . . . . RA–28 engine
. . . . . turbofan engines
. . . . . Bristol–Siddeley BS 53 engine
. . . . . CF–700 engine
. . . . . convertible fan–shaft engines
. . . . . J–97 engine
. . . . . TF–30 engine
. . . . . TF–34 engine
. . . . . TF–41 engine
. . . . . turboprop engines
. . . . . T–34 engine
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. . . . . T–53 engine
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. . . . . T–56 engine
. . . . . T–63 engine
. . . . . T–64 engine
. . . . . T–74 engine
. . . . . T–76 engine
. . . . . T–78 engine
. . . . . turboramjet engines
. . . T–58 engine
RT aircraft engines
axial flow turbines
Brayton cycle
external combustion engines
flameout
steam turbines
supersonic turbines
turbogenerators
two stage turbines

gas turbines
DEF Turbines rotated by expanding gases, as in a turbojet engine or in a turbosupercharger.
GS turbomachinery
. turbines
. . **gas turbines**
RT axial flow turbines
Brayton cycle
closed cycles
combined cycle power generation
internal combustion engines
spray ingestion
steam turbines
supersonic turbines
turbogenerators
two stage turbines

gas valves
GS pneumatic equipment
. **gas valves**
valves
. **gas valves**
RT automatic control valves
cocks
dampers (valves)
fuel valves
relief valves

gas viscosity
GS transport properties
. viscosity
. . **gas viscosity**
RT gaseous diffusion
Lennard–Jones gas

gas welding
SN (EXCLUDES ELECTRIC WELDING IN THE PRESENCE OF A CONTROLLED GASEOUS ATMOSPHERE)
GS welding
. fusion welding
. . **gas welding**
. . . brazing
. . . . low temperature brazing
RT gas–metal interactions
pressure welding

gas–gas interactions
GS **gas–gas interactions**
. association reactions
RT Dalton law
detonable gas mixtures
exhaust emission
gaseous diffusion
∞ interactions

gas–ion interactions
UF *ion–gas interactions*
RT gaseous diffusion
∞ interactions

gas–liquid interactions
GS **gas–liquid interactions**
. air water interactions
. . air sea ice interactions
RT condensing
energy transfer
evaporation
gaseous diffusion
heat transfer
∞ interactions
interfacial tension
mass transfer
momentum transfer
noncondensable gases
surface reactions

gas–metal interactions
GS fluid–solid interactions
. gas–solid interactions
. . **gas–metal interactions**
RT ablation
adsorption
chemical reactions
chemisorption
∞ condensation
condensing
corrosion
diffusion
evaporation
exhaust emission
flame propagation
gas welding
gaseous diffusion
hot corrosion
hydrogen embrittlement
∞ interactions
metal combustion
metal vapors
metal–gas systems
occlusion
solid phases
sublimation
sulfidation
vapor phases

gas–solid interactions
DEF Effects of the impingement of gases (particles) on solid surfaces in various environments.
GS fluid–solid interactions
. **gas–solid interactions**
. . gas–metal interactions
RT air land interactions
dynamic loads
fluid dynamics
impingement
∞ interactions
panel method (fluid dynamics)

gas–solid interfaces
GS boundaries
. fluid boundaries
. . **gas–solid interfaces**
interfaces
. fluid boundaries
. . **gas–solid interfaces**
RT boundary layers
fluid–solid interactions
heat transfer
interface stability
metal surfaces
occlusion
solid phases
solid–solid interfaces
solubility
sublimation
vapor phases

gasdynamic lasers
GS stimulated emission devices
. **lasers**
. . **gasdynamic lasers**
RT gas flow
gas lasers
laser outputs
plasmadynamic lasers
tube lasers

gaseous cavitation
USE **cavitation flow**
gas flow

gaseous diffusion
DEF A method of isotopic separation based on the fact that gas atoms or molecules with different masses will diffuse through a porous barrier (orm membrane) at different rates. The method is used to separate uranium 235 from uranium 238. It requires large gaseous diffusion plants and enormous amounts of electric power.
UF *gas diffusion*
GS diffusion
. **gaseous diffusion**
. . gaseous self–diffusion
transport properties
. **gaseous diffusion**
. . gaseous self–diffusion
RT diffusion coefficient
gas density

gas dynamics
gas flow
gas lubricants
gas recovery
gas transport
gas viscosity
gas–gas interactions
gas–ion interactions
gas–liquid interactions
gas–metal interactions
mixing ratios
molecular diffusion
pollution transport
thermal diffusion

gaseous fission reactors
GS nuclear reactors
. **gaseous fission reactors**
RT fissile fuels
fissionable materials
∞ gas reactors
nuclear lightbulb engines
nuclear propulsion
plasma propulsion

gaseous fuels
GS fuels
. **gaseous fuels**
. . natural gas
. . . liquefied natural gas
gases
. flammable gases
. . **gaseous fuels**
. . . natural gas
. . . . liquefied natural gas
RT lignite
liquid fuels

gaseous rocket propellants
GS propellants
. rocket propellants
. . **gaseous rocket propellants**
RT cryogenic rocket propellants
endothermic fuels
gas mixtures
high energy propellants
hybrid propellants
hydrogen fuels
liquid rocket propellants
man operated propulsion systems
monopropellants
storable propellants

gaseous self-diffusion
GS diffusion
. gaseous diffusion
. . **gaseous self-diffusion**
transport properties
. gaseous diffusion
. . **gaseous self-diffusion**
RT electron diffusion
gas dynamics
kinetic theory
molecular diffusion
particle diffusion
plasma diffusion

gases
GS **gases**
. ammonia
. . liquid ammonia
. carbon dioxide
. carbon monoxide
. carbon suboxides
. cold gas
. compressed gas
. . high pressure oxygen
. dissolved gases
. exhaust gases
. . flue gases
. flammable gases
. . gaseous fuels
. . . natural gas
. . . . liquefied natural gas
. . liquefied natural gas
. . pyrogen
. gas mixtures
. . air
. . . alveolar air
. . . compressed air
. . . expired air
. . . high temperature air
. . . liquid air
. . detonable gas mixtures
. gas streams
. gray gas
. high temperature gases
. . high temperature air
. hydrogen
. . hydrogen isotopes
. . . deuterium
. . . hydrogen 4
. . . metallic hydrogen
. . . tritium
. . liquid hydrogen
. ideal gas
. ionized gases
. . Lorentz gas
. liquefied gases
. . liquefied natural gas
. . liquid air
. . liquid ammonia
. . liquid fluorine
. . liquid helium
. . . liquid helium 2
. . liquid hydrogen
. . liquid neon
. . liquid nitrogen
. . liquid oxygen
. molecular gases
. . polar gases
. . polystomic gases
. . . diatomic gases
. monatomic gases
. neutral gases
. nitrogen
. . liquid nitrogen
. . nitrogen isotopes
. . . nitrogen 15
. . . nitrogen 18
. . solid nitrogen
. noncondensable gases
. nongray gas
. nonpolar gases
. ortho hydrogen
. oxygen
. . liquid oxygen
. . oxygen isotopes
. . . oxygen 17
. . . oxygen 18
. ozone
. para hydrogen
. phosgene
. rare gases
. . argon
. . . argon isotopes
. . helium
. . . helium isotopes
. . . liquid helium
. . . . liquid helium 2
. . krypton
. . . krypton isotopes
. . . . krypton 85
. . neon
. . . liquid neon
. . . neon isotopes
. . radon
. . . radon isotopes
. . xenon
. . . xenon isotopes
. . . . xenon 129
. . . . xenon 133
. . . . xenon 135
. rarefied gases
. . cosmic gases
. . . interplanetary gas
. . . interstellar gas
. rarefied plasmas
. real gases
. residual gas
. solidified gases
. . solid cryogens
. . . solid nitrogen
. sulfur hexafluoride
RT ∞ atmospheres
coal gasification
∞ fluids
fuels
fumes
gas dynamics
gas flow
gas recovery
hydrogen clouds
metal–gas systems
nonpoint sources
odors
plasmas (physics)
pneumatics
prevaporization
reaction products
vapor phases
vapors

gasification
GS **gasification**
. coal gasification
. . hydropyrolysis
RT synthane
vaporizing

gaskets
DEF Preformed deformable devices designed to be placed between two adjoining parts to prevent the passage of liquid or gas between the parts.
GS seals (stoppers)
. **gaskets**
RT labyrinth seals
O ring seals
pump seals

gasohol (fuel)
DEF Synthetic fuel consisting of a mixture of gasoline and grain alcohol (ethanol).
GS fuels
. chemical fuels
. . synthetic fuels
. . . **gasohol (fuel)**
RT alcohols
gasoline

gasoline
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . **gasoline**
. . liquid fuels
. . . **gasoline**
products
. petroleum products

. . gasoline
RT antiknock additives
automobile fuels
diesel fuels
gasohol (fuel)
jet engine fuels
kerogen
kerosene
octane number
shale oil
solvent refined coal

GASP
USE **Global Air Sampling Program**

Gaspra asteroid
(added July 1995)
GS celestial bodies
. asteroids
. . **Gaspra asteroid**
RT asteroid belts
Galileo spacecraft
meteoroids

gastrointestinal system
GS anatomy
. digestive system
. . **gastrointestinal system**
. . . appendix (anatomy)
. . . intestines
. . . . rectum
. . . stomach
RT abdomen
colic
. gall
glands (anatomy)
liver
organs
pancreas
∞ systems

GATE (experiment)
USE **GARP Atlantic Tropical Experiment**

∞ **gates**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT closures
gates (circuits)
gates (openings)

gates (circuits)
UF *OR–gates*
GS circuits
. **gates (circuits)**
. . threshold gates
RT coincidence circuits
∞ gates
logic circuits
logical elements
switching circuits
threshold logic
trigger circuits

gates (openings)
RT apertures
∞ barriers
canals
doors
fences (barriers)
∞ gates
hatches
hydraulic equipment
openings
outlets
safety devices
vents
walls

gauge invariance
GS invariance
. **gauge invariance**
RT electromagnetic radiation
supergravity
transformations (mathematics)

gauge theory
DEF A field theory in which symmetrics of the theory are implemented locally in space and time. This leads to theories where forces are generally carried by vector bosons. Some gauge theories are electrodynamics, quantum chromodynamics, and Yang Mills theory.
GS field theory (physics)
. **gauge theory**
. . quantum chromodynamics
. . unified field theory
. . . electroweak model
. . . standard model (particle physics)
RT gravitation theory
string theory
supergravity
supersymmetry
∞ theories
Yang–Mills fields
Yang–Mills theory

Gauss equation
UF *Gauss function*
GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **Gauss equation**
RT∞ equations
Maxwell equation

Gauss function
USE **Gauss equation**

Gauss–Markov theorem
GS theorems
. **Gauss–Markov theorem**
RT least squares method
statistical analysis
variance (statistics)

Gaussian distributions
USE **normal density functions**

Gaussian elimination
DEF A technique for solving linear equations by progressive differencing.
RT elimination
linear equations
matrices (mathematics)
subtraction

Gaussian noise
USE **random noise**

Gaussmeters
USE **magnetometers**

gauze
GS fabrics
. **gauze**
RT casts

GAW–1 airfoil
UF *General Aviation Whitcomb airfoil*
GS airfoils
. wings
. . **GAW–1 airfoil**
RT ATLIT project
PA–34 Seneca aircraft
wing profiles

GAW–2 airfoil
UF *General Aviation Whitcomb airfoil*
GS airfoils
. wings
. . **GAW–2 airfoil**
RT body–wing configurations
flaps (control surfaces)
general aviation aircraft
wing profiles

GC–130 aircraft
USE **C–130 aircraft**

GCR (reactors)
USE **gas cooled reactors**

GDOP
USE **geometric dilution of precision**

GE 625 computer
GS data processing equipment
. computers
. . digital computers
. . . GE computers
. . . . **GE 625 computer**

GE 635 computer
GS data processing equipment
. computers
. . digital computers
. . . GE computers
. . . . **GE 635 computer**

GE computers
UF *General Electric computers*
GS data processing equipment
. computers
. . digital computers
. . . **GE computers**
. . . . GE 625 computer
. . . . GE 635 computer

∞ **gear**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT arresting gear
gears
landing gear
mechanical drives

gear teeth
RT gears
mechanical drives

gearboxes
USE **transmissions (machine elements)**

gears
GS **gears**
. racks (gears)
RT counter–rotating wheels
∞ gear
gear teeth
idlers
lubrication
mechanical drives
transmissions (machine elements)
wheels
windmills (windpowered machines)

gegenschein
DEF A round or elongated spot of light in the sky at a point 180 degrees from the sun. Also called counterglow.
GS electromagnetic radiation
. light (visible radiation)
. . **gegenschein**
extraterrestrial radiation

. **gegenschein**
RT night sky
polarized light
sky brightness
solar radiation
terrestrial dust belt
zodiacal light

gehlenite
DEF A mineral of the melilite group. It is isomorphous with akermenite. Used for vertardenite.
UF *velardenite*
GS aluminum compounds
. aluminum silicates
. . **gehlenite**
calcium compounds
. calcium silicates
. . **gehlenite**
minerals
. **gehlenite**
silicon compounds
. silicates
. . aluminum silicates
. . . **gehlenite**
. . calcium silicates
. . . **gehlenite**
RT aluminum oxides

Geiger counters
DEF Instruments for detecting and measuring radioactivity. In full, Geiger–Mueller counter. Used for Geiger–Mueller tubes.
UF *Geiger–Mueller tubes*
GS ionization chambers
. **Geiger counters**
measuring instruments
. counters
. . radiation counters
. . . **Geiger counters**
. radiation measuring instruments
. . radiation counters
. . . **Geiger counters**
RT dosimeters
neutron counters
overvoltage
particle telescopes
proportional counters
radiation detectors

Geiger–Mueller tubes
USE **Geiger counters**

gel permeation chromatography
USE **liquid chromatography**

gelatins
RT collagens
∞ food
gels
nonNewtonian fluids

gelation
RT coagulation
colloiding
gels
solidification
thixotropy

gelbstoff
USE **dissolved organic matter**

gelled propellants
GS propellants
. **gelled propellants**
. . gelled rocket propellants
RT chemical fuels
colloidal propellants
high temperature propellants
hydrogen fuels
metal fuels
metal propellants
plastic propellants
propellant additives
solid propellants

gelled rocket propellants
UF *thixotropic propellants*
GS propellants
. gelled propellants
. . **gelled rocket propellants**
. rocket propellants
. . liquid rocket propellants
. . . **gelled rocket propellants**
RT chemical fuels
cryogenic rocket propellants
gels
high temperature propellants
hybrid propellants
hypergolic rocket propellants
metal propellants
monopropellants
slurry propellants
solid rocket propellants
storable propellants

gels
DEF Liquids containing colloidal structural networks that form continuous matrices and completely pervade the liquid phase. Gels deform elastically upon application of shear forces less than the yield stress. At shear forces above the yield stress, the flow properties are principally determined by the gel matrices.
GS **gels**
. double base rocket propellants
. silica gel
. xerogels
RT **aerogels**
colloids
dopes
gelatins
gelation
gelled rocket propellants
nonNewtonian fluids
slurries
thickeners (materials)
thixotropy

Gemini (GT–1) spacecraft
GS manned spacecraft
. Gemini spacecraft
. . **Gemini (GT–1) spacecraft**
reentry vehicles
. recoverable spacecraft
. . Gemini spacecraft
. . . **Gemini (GT–1) spacecraft**
soft landing spacecraft
. Gemini spacecraft
. . **Gemini (GT–1) spacecraft**
RT manned space flight

Gemini 2 spacecraft
GS manned spacecraft
. Gemini spacecraft
. . **Gemini 2 spacecraft**
reentry vehicles
. recoverable spacecraft
. . Gemini spacecraft
. . . **Gemini 2 spacecraft**
soft landing spacecraft
. Gemini spacecraft
. . **Gemini 2 spacecraft**
RT manned space flight

Gemini B spacecraft
GS manned spacecraft
. **Gemini B spacecraft**
reentry vehicles
. recoverable spacecraft
. . **Gemini B spacecraft**
soft landing spacecraft
. **Gemini B spacecraft**
RT manned space flight

Gemini flights
GS space flight
. manned space flight
. . **Gemini flights**
. . . Gemini 3 flight
. . . **Gemini 4 flight**
. . . Gemini 5 flight
. . . Gemini 6 flight
. . . Gemini 7 flight
. . . Gemini 8 flight
. . . Gemini 9 flight
. . . Gemini 10 flight
. . . Gemini 11 flight
. . . Gemini 12 flight

Gemini project
GS programs
. NASA programs
. . NASA space programs
. . . **Gemini project**
. projects
. . **Gemini project**
. space programs
. . NASA space programs
. . . **Gemini project**
RT Agena B rocket vehicle
Agena rocket vehicles
Atlas launch vehicles
integrated mission control center
Mercury project
Titan project

Gemini spacecraft
GS manned spacecraft
. **Gemini spacecraft**
. . Gemini 2 spacecraft
. . Gemini (GT–1) spacecraft
reentry vehicles
. recoverable spacecraft
. . **Gemini spacecraft**
. . . Gemini 2 spacecraft
. . . Gemini (GT–1) spacecraft
soft landing spacecraft
. **Gemini spacecraft**
. . Gemini 2 spacecraft
. . Gemini (GT–1) spacecraft
RT manned space flight
space capsules
Titan project

Gemini 3 flight
GS space flight
. manned space flight
. . Gemini flights
. . . **Gemini 3 flight**
RT Titan launch vehicles

Gemini 4 flight
GS space flight
. manned space flight
. . Gemini flights
. . . **Gemini 4 flight**

Gemini 5 flight
GS space flight
. manned space flight
. . Gemini flights
. . . **Gemini 5 flight**

Gemini 6 flight
GS space flight
. manned space flight
. . Gemini flights
. . . **Gemini 6 flight**

Gemini 7 flight
GS space flight
. manned space flight
. . Gemini flights
. . . **Gemini 7 flight**
RT Titan launch vehicles

Gemini 8 flight
GS space flight
. manned space flight
. . Gemini flights
. . . **Gemini 8 flight**
RT Titan launch vehicles

Gemini 9 flight
GS space flight
. manned space flight
. . Gemini flights
. . . **Gemini 9 flight**
RT Titan launch vehicles

Gemini 10 flight
GS space flight
. manned space flight
. . Gemini flights
. . . **Gemini 10 flight**
RT Titan launch vehicles

Gemini 11 flight
GS space flight
. manned space flight
. . Gemini flights
. . . **Gemini 11 flight**
RT Titan launch vehicles

Gemini 12 flight
GS space flight
. manned space flight
. . Gemini flights
. . . **Gemini 12 flight**
RT Titan launch vehicles

Geminid meteoroids
GS celestial bodies
. meteoroid showers
. . **Geminid meteoroids**
meteoroids
. . **Geminid meteoroids**

gene expression
DEF The process by which a gene's coded information is converted into the structures present and operating in the cell.
UF *gene regulation*
RT biological diversity
biological evolution
chromosomes
cloning (biology)
deoxyribonucleic acid
evolution (development)
genes
genetics
molecular biology
ribonucleic acids

gene regulation
USE **gene expression**

general aviation aircraft
UF *executive aircraft*
private aircraft
GS **general aviation aircraft**
. agricultural aircraft
. Beechcraft 18 aircraft
. C–33 aircraft
. C–35 aircraft
. Cessna 172 aircraft
. Cessna 205 aircraft
. Cessna 210 aircraft
. Cessna 402B aircraft
. CL–600 challenger aircraft
. DH 125 aircraft
. DHC 2 aircraft
. DO–27 aircraft
. DO–28 aircraft
. G–1 aircraft
. HC–3 helicopter
. Yak 40 aircraft
RT ∞ aeronautics
air transportation
∞ **aircraft**
civil aviation
commercial aircraft
commuter aircraft
GAW–2 airfoil
helicopters
jet aircraft
light aircraft
∞ low wing aircraft
passenger aircraft
Piper aircraft
single engine aircraft
∞ subsonic aircraft
training aircraft
transport aircraft
turboprop aircraft
utility aircraft

General Aviation Whitcomb airfoil
USE **GAW–1 airfoil**
GAW–2 airfoil

General Dynamics aircraft
GS **General Dynamics aircraft**
. B–58 aircraft
. C–131 aircraft
. CL–41 aircraft
. CL–44 aircraft
. CL–84 aircraft
. CV–340 aircraft
. CV–440 aircraft
. CV–880 aircraft
. CV–990 aircraft
. F–102 aircraft
. F–106 aircraft
. F–111 aircraft
RT ∞ aircraft
Canadair aircraft
PA–34 Seneca aircraft

General Electric computers
USE **GE computers**

general overviews
(added February 1993)
RT bibliographies
recommendations
surveys
technology utilization

generalization (psychology)
RT transfer of training

∞ **generation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cogeneration
heat generation
initiation
regeneration (engineering)

∞ **generators**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT AC generators
arc generators
boilers
cavity vapor generators
colloidal generators
DC generators
decommutators
direct power generators
duochromators
electric generators
electrostatic generators
energy conversion efficiency
function generators
gas generators
Hall generators
harmonic generators
homopolar generators
impulse generators
linear alternators
magnetohydrodynamic generators
motors
noise generators
photoelectric generators
plasma generators
pulse generators
radiation sources
report generators
rotating generators
shock wave generators
signal generators
solar sea power plants
sound generators
stators
stimulated emission devices
subharmonic generators
test pattern generators
thermoelectric generators
tide powered generators
turbogenerators
vaporizers
voltage generators
vortex generators
wave generation
windpowered generators

genes
RT chromosomes
cloning (biology)
deoxyribonucleic acid
gene expression
genetic code
genetic engineering
genetics
molecular biology
mutations
ribonucleic acids

genetic algorithms
(added December 1992)
DEF Parameter search procedures loosely based on the mechanics of natural population genetics and the survival-of-the-fittest.
GS mathematical logic
. algorithms
. . **genetic algorithms**
optimization
. **genetic algorithms**
RT artificial intelligence
control systems design
machine learning
multidisciplinary design optimization
neural nets
optimal control

parameter identification
trajectory optimization

genetic code
DEF The sequence of nucleotides, coded in triplets along the messenger RNA that determines the sequence of amino acids in protein synthesis.
RT chromosomes
cloning (biology)
genes
genetics

genetic diversity
USE **biological diversity**

genetic engineering
DEF The intentional production of new genes and alteration of genomes by the substitution or addition of new genetic material. Used for hybrids (biology).
UF *hybrids (biology)*
RT biochemistry
bioengineering
∞ biology
biosynthesis
cloning (biology)
genes
genetics

genetics
RT biological diversity
biological evolution
∞ biology
breeding (reproduction)
chromosomes
cloning (biology)
congenital anomalies
cytogenesis
dominance
evolution (development)
gene expression
genes
genetic code
genetic engineering
mutagens
mutations
neurospora
nuclei (cytology)
nucleogenesis
species diffusion

Genie rocket vehicle
UF *MB–1 rocket vehicle*
GS rocket vehicles
. single stage rocket vehicles
. . **Genie rocket vehicle**
RT Astrobee rocket vehicles
solid propellant rocket engines

genitourinary system
GS anatomy
. **genitourinary system**
. . bladder
. . kidneys
. . . glomerulus
. . reproductive systems
. . . sex glands
. . . . gonads
. . . . . ovaries
. . . . . testes
. . . . prostate gland
. . . uterus
RT gynecology
organs
∞ systems
urology

GEO environments
USE **Earth orbital environments**

geoastrophysics
USE **astrophysics**

geobotany
GS botany
. **geobotany**
RT biogeochemistry
geographic distribution
plants (botany)
rain forests
trees (plants)

geocentric coordinates
GS coordinates
. planetocentric coordinates
. . **geocentric coordinates**
RT astronomical coordinates
celestial reference systems
inertial coordinates
planet ephemerides
spherical coordinates

geochemistry
DEF The study of the distribution of the amounts of the chemical elements in minerals, ores, rocks, soils, water, and the atmosphere. Also, the study of the circulation of the elements in nature, on the basis of the properties of the atom and ions. A major concern of geochemistry is the synoptic evaluation of the abundance of the elements of the Earth's crust and in major classes of rocks and minerals.
GS environmental chemistry
. **geochemistry**
. . biogeochemistry
RT abundance
∞ chemistry
cosmochemistry
Earth sciences
geochronology
geology
geophysics
hydrology
isotope ratios
limnology
marine chemistry
mineralogy
paleobiology
paleontology
petrology
radioactivity

geochronology
DEF The study of time in relationship to the history of the Earth, especially by the absolute age determination and relative dating systems developed for this purpose.
GS chronology
. **geochronology**
geology
. **geochronology**
RT Cambrian Period
Cenozoic Era
Cretaceous Period
Cretaceous–Tertiary boundary
dendrochronology
geochemistry
geophysics
isotope ratios
Mesozoic Era
paleobiology
paleontology
Paleozoic Era
particle tracks
petrogenesis
radioactive age determination
stratigraphy
Tertiary Period

geocoronal emissions
GS atmospheric radiation
. sky radiation
. . airglow
. . . **geocoronal emissions**
electromagnetic radiation
. light (visible radiation)
. . sky radiation
. . . airglow
. . . . **geocoronal emissions**

geocyclotrons
GS particle accelerators
. cyclotrons
. . **geocyclotrons**
RT ∞ accelerators
elementary particles

geodesic lines
GS geometry
. Euclidean geometry
. . lines (geometry)
. . . **geodesic lines**
RT chords (geometry)
curves (geometry)

geodesy
DEF The science which deals mathematically with the size and shape of the Earth, and the Earth's external gravity field, and with surveys of such precision that overall size and shape of the Earth must be taken into consideration. Used for Earth figure, Earth shape, and Izsak ellipsoid.
UF *Earth figure*
Earth shape
Izsak ellipsoid
GS **geodesy**
. celestial geodesy
RT altimetry
Earth (planet)
Earth axis
geodetic accuracy
geodetic surveys
geoids
geology
geophysics
gravimeters
lunar retroreflectors
oblate spheroids
OGO–4
OGO–5
perturbation
photomapping
polar wandering (geology)
satellite altimetry
satellite doppler positioning
topography
vinti theory

geodetic accuracy
DEF The degree to which point positions or boundaries indicated on maps or imagery correspond with true geodetic positions.
GS accuracy
. **geodetic accuracy**
RT Earth surface
geodesy
geoids
geopotential height
satellite doppler positioning

geodetic coordinates
DEF Quantities which define the position of a point on the spheroid of reference with respect to the planes of the geodetic equator and of a reference meridian.
GS coordinates
. **geodetic coordinates**
RT International Satellite Geodesy Experiment
latitude
longitude
∞ nets
satellite doppler positioning

geodetic satellites
GS artificial satellites
. **geodetic satellites**
. . ANNA satellites
. . Explorer 29 satellite
. . Explorer 36 satellite
. . GEOLE satellites
. . GEOS 1 satellite
. . GEOS 2 satellite
. . GEOS 3 satellite
. . Geosat satellites
. . LARGOS satellite
. . PAGEOS satellite
. . Vanguard 1 satellite
RT active satellites
celestial geodesy
navigation satellites
NAVSTAR satellites
passive satellites
satellite altimetry
satellite doppler positioning
Vanguard satellites

geodetic surveys
DEF Surveys which takes into account the size and shape of the Earth.
GS surveys
. **geodetic surveys**
RT geodesy
geological surveys
Phoenix quadrangle (AZ)
satellite doppler positioning
topography

geodimeters
DEF Trade name of electronic–optical devices that measure ground distances precisely by electronic timing and phase comparison of modulated light waves that travel from a master unit to a reflector and return to a light–sensitive tube where an electric current is set up. They are normally used at night and are effective with first–order accuracy up to distances of 5–40 km (3–25 miles). The term is derived from GEOdetic Distance METER.
GS measuring instruments
. distance measuring equipment
. . **geodimeters**
. optical measuring instruments
. . **geodimeters**
optical equipment
. optical measuring instruments
. . **geodimeters**
RT optical measurement
range finders
tellurometers

Geodynamic Experimental Ocean Satellite
USE **GEOS–D satellite**

geodynamics
DEF Study of the dynamic forces or processes within the Earth. Used for crustal dynamics.
UF *crustal dynamics*
RT Chandler wobble
crustal fractures
∞ dynamics
Earth movements
Earth sciences
geomorphology
geophysics
planetary quakes
shock waves
terradynamics

geoelectricity
DEF The Earth's natural electric fields and phenomena. It is closely related to geomagnetism.
GS electricity
. **geoelectricity**
. . telluric currents
RT Earth (planet)
field aligned currents
geophysics
geopotential

geofabrics
USE **geotechnical fabrics**

geofractures
USE **geological faults**

geographic applications program
GS programs
. space programs
. . **geographic applications program**
RT Earth resources
Earth Resources Program
geography
mapping
NASA programs
remote sensors
satellite–borne photography
soil mapping
terrain analysis

geographic distribution
(added June 1995)
GS distribution (property)
. spatial distribution
. . **geographic distribution**
RT ∞ distribution
economic development
geobotany
geomorphology
populations
remote sensing
species diffusion
vegetative index

geographic information systems
DEF Computer assisted systems that acquire, store, manipulate, and display geographic data. Some systems are not automated.
GS information systems
. **geographic information systems**
RT aerial photography
data systems
geography
imagery
infrared photography
remote sensing

geography
DEF The study of all aspects of the Earth's surface including its natural and political divisions, the distribution and differentiation of areas and, often, man in relationship to his environment.
GS **geography**
. hypsography
. orography
RT Arctic regions
cadastral mapping
climatology
continents
Earth (planet)
Eastern Hemisphere
economic development
estuaries
geographic applications program
geographic information systems
geomorphology
Heat Capacity Mapping Mission
mapping
maps
oceanography
oceans
plains
polar regions
selenography
temperate regions
tropical regions
tundra
Western hemisphere

geoids
DEF The figure of the Earth as defined by the geopotential surface which most nearly coincides with mean sea level over the entire surface of the Earth.
RT altimetry
geodesy
geodetic accuracy
geometry
geophysics
oblate spheroids
satellite altimetry
shapes
spheroids
symmetrical bodies

GEOLE satellites
GS artificial satellites
. French satellites
. . **GEOLE satellites**
. geodetic satellites
. . **GEOLE satellites**
. meteorological satellites
. . **GEOLE satellites**
RT EOLE satellites
French space program

geological faults
DEF A surface or zone of rock fracture along which there has been displacement, from a few centimeters to a few kilometers in scale. Used for closed faults, cross faults, echelon faults, geofractures, grabens, rifts, splits (geology), step faults, and thrust faults.
UF *closed faults*
cross faults
echelon faults
geofractures
grabens
rifts
splits (geology)
step faults
thrust faults
GS **geological faults**
. African rift system
. San Andreas Fault
RT crevasses
crustal fractures

earthquake damage
earthquakes
∞ faults
fissures (geology)
folds (geology)
formations
inliers (landforms)
landforms
massifs
mid-ocean ridges
plates (tectonics)
Rouse belts
San Andreas Fault experiment
synclines

geological surveys
GS surveys
. **geological surveys**
RT exploration
geodetic surveys
geology
geophysics
paleontology
petrology
photogeology
radar geology

geology
DEF The study of the planet Earth—the materials of which it is made, the processes that act on these materials, the products formed, and the history of the planet and its life forms since its origin. Geology considers the physical forces that act on the Earth, the chemistry of its constituent materials, and the biology of its past inhabitants as revealed by fossils. Clues on the origin of the planet are sought in a study of the Moon and other extraterrestrial bodies. The knowledge thus obtained is placed in the service of man—to aid in the discovery of minerals and fuels of value in the Earth's crust, to identify geologically stable sites for major structures, and to provide foreknowledge of some of the dangers associated with the mobile forces in a dynamic Earth.
GS **geology**
. beds (geology)
. . salt beds
. cones (volcanoes)
. contacts (geology)
. crossbedding (geology)
. domes (geology)
. gaps (geology)
. geochronology
. geomorphology
. glaciology
. hydrogeology
. kettles (geology)
. lithology
. lunar geology
. orography
. petrology
. . petrogenesis
. . petrography
. photogeology
. planetary geology
. . Mars volcanoes
. radar geology
. structural properties (geology)
. subduction (geology)
. tectonics
. volcanoes
. . Mars volcanoes
. volcanology
RT bedrock
boreholes
bridges (landforms)
Canadian Shield
continental shelves
Earth (planet)
Earth planetary structure
Earth sciences
exploitation
exploration
fiords
formations
geochemistry
geodesy
geological surveys
geophysical observatories
geophysics
geopressure
geotemperature
gravimetry
Great Basin (US)
inliers (landforms)
isthmuses
kreep
massifs
meteorology
mineral deposits
mineralogy
minerals
morphology
ocean bottom
oceanography
oil exploration
outcrops
paleomagnetism
paleontology
photomapping
∞ physical sciences
Precambrian period
regolith
rock mechanics
rocks
∞ science
seismology
shatter cones
soils
stratigraphy
structural basins

geomagnetic anomalies
USE **magnetic anomalies**

geomagnetic crotchets
USE **sudden ionospheric disturbances**

geomagnetic effects
USE **magnetic effects**

geomagnetic equator
USE **magnetic equator**

geomagnetic field
USE **geomagnetism**

geomagnetic hollow
GS **anomalies**
. **magnetic anomalies**
. . **geomagnetic hollow**
RT Earth magnetosphere
magnetohydrodynamic flow
plasma clouds

geomagnetic latitude
DEF Angular distances from the geomagnetic equator, measured northward or southward through 90 degrees and labeled N or S to indicate the direction of measurement.
GS **latitude**
. **geomagnetic latitude**
RT coordinates
geomagnetism
polar cusps

geomagnetic micropulsations
GS pulses
. geomagnetic pulsations
. . **geomagnetic micropulsations**
. micropulsations
. . **geomagnetic micropulsations**
variations
. magnetic variations
. . geomagnetic pulsations
. . . **geomagnetic micropulsations**
RT nocturnal variations
telluric currents

geomagnetic pulsations
GS pulses
. **geomagnetic pulsations**
. . geomagnetic micropulsations
variations
. magnetic variations
. . **geomagnetic pulsations**
. . . geomagnetic micropulsations
RT geomagnetism
KP index
magnetospheric instability
nocturnal variations

geomagnetic storms
USE **magnetic storms**

geomagnetic tail
SN (RESTRICTED TO THE EARTH MAGNETOTAIL)
UF *Earth magnetotail*
GS environments
. Earth magnetosphere
. . **geomagnetic tail**
RT field aligned currents
geomagnetism
magnetic fields
magnetic islands
∞ magnetotails
planetary magnetic fields
planetary magnetotails
polar cusps

geomagnetically trapped particles
USE **radiation belts**

geomagnetism
DEF The magnetic phenomena, collectively considered, exhibited by the Earth and its atmosphere and by extension the magnetic phenomena in interplanetary space. The study of the magnetic field of the Earth. Used for geomagnetic field and terrestrial magnetism.
UF *geomagnetic field*
terrestrial magnetism
GS magnetic fields
. **geomagnetism**
magnetic properties
. **geomagnetism**
RT aeromagnetism
barium ion clouds
Birkeland currents
continental drift
dynamo theory
Earth (planet)
Earth gravitation
Earth magnetosphere
Earth sciences
electrojets
field aligned currents
field theory (physics)
flux transfer events
geomagnetic latitude
geomagnetic pulsations
geomagnetic tail

geophysics
∞ inclination
International Magnetospheric Study
KP index
M region
magnetic anomalies
magnetic disturbances
magnetic effects
magnetic equator
magnetic poles
magnetic surveys
magnetoionics
magnetometers
magnetosheath
MagSat 1 satellite
Magsat A satellite
MagSat B satellite
MagSat satellites
paleomagnetism
planetary magnetic fields
polar cusps
space plasmas
variometers

geometric accuracy
DEF The inherent geometric fidelity of an imaging system.
GS accuracy
. **geometric accuracy**
RT distortion
geometric rectification (imagery)
image processing
image resolution

geometric dilution of precision
DEF A navigation and positioning system performance index expressing the dilution of range measurement precision due to the geometric relationship between user and satellites. It is formulated as the square root of the sum of the variances of position estimates in the three orthogonal directions and can be employed to determine the optimal locations for network satellites and in the selection of optimal satellite signals sources. Used for GDOP.
UF *GDOP*
GS dilution
. **geometric dilution of precision**
RT precision

geometric rectification (imagery)
DEF The correction of image distortions due to sensor view angle, platform attitude, or target surface features.
GS image processing
. **geometric rectification (imagery)**
rectification
. **geometric rectification (imagery)**
RT atmospheric correction
geometric accuracy
image enhancement
imagery

geometrical acoustics
DEF The study of the behavior of sound under the assumption that sound transversing a homogeneous medium travels along straight lines or rays. Used for ray acoustics.
UF *ray acoustics*
GS acoustics
. **geometrical acoustics**
RT geometrical theory of diffraction
geometry
wave propagation

geometrical hydromagnetics
USE **magnetohydrodynamics**

geometrical optics
DEF The geometry of paths of light rays and their imagery through optical systems. Used for ray optics.
UF *ray optics*
RT acousto–optics
asphericity
astigmatism
Cassegrain optics
crystal optics
diffraction propagation
eikonal equation
fiber optics
focusing
geometrical theory of diffraction
gradient index optics
holographic optical elements
light (visible radiation)
light transmission
nonlinear optics
numerical aperture
optical equipment
optical measurement
optical paths
optical properties
optical reflection
∞ optics
physical optics
ray tracing
Snells law
underwater optics
x ray optics

geometrical theory of diffraction
DEF A ray theory of diffraction process.
RT diffraction
diffraction patterns
geometrical acoustics
geometrical optics
ray tracing
reflectance
∞ theories
wave diffraction

geometrodynamics
USE **relativity**

geometry
GS **geometry**
. Bose geometry
. computational geometry
. crack geometry
. curvature
. curves (geometry)
. . catenaries
. . cycloids
. . epicycloids
. . S curves
. . . Gompertz curves
. cusps (mathematics)
. . double cusps
. differential geometry
. . lie groups
. . . spinor groups
. . Riemann manifold
. . tensor analysis
. duct geometry
. Euclidean geometry
. analytic geometry
. . . catenaries
. . . circumferences
. . . conics
. . . . ellipses
. . . . hyperbolas
. . . . parabolas
. . . cycloids
. . . epicycloids
. . . loci
. . . Mercator projection
. . . quadrants
. . . S curves
. . . . Gompertz curves
. . . spheroids
. . . . oblate spheroids
. . . . prolate spheroids
. . . tangents
. . . toruses
. . . trigonometry
. . angles (geometry)
. . . angle of attack
. . . . zero angle of attack
. . . Bragg angle
. . . Brewster angle
. . . dihedral angle
. . . elevation angle
. . . look angles (electronics)
. . . look angles (tracking)
. . . sweep angle
. . . . sweepback
. . . . . leading edge sweep
. . Cartesian coordinates
. . circles (geometry)
. . . great circles
. . descriptive geometry
. . lines (geometry)
. . . chords (geometry)
. . . geodesic lines
. . points (mathematics)
. . . fixed points (mathematics)
. . . inflection points
. . polygons
. . . hexagons
. . . tetragons
. . . . parallelograms
. . . . . rhombolds
. . . . rectangles
. . . . squares (mathematics)
. . . . trapezoids
. . . triangles
. . polyhedrons
. . . cubes (mathematics)
. . . icosahedrons
. . . octahedrons
. . . parallelepipeds
. . . pyramids
. . . rhombohedrons
. . . tetrahedrons
. . projective geometry
. . . Mercator projection
. . radii
. . . Larmor radius
. flow geometry
. fractals
. nozzle geometry
. specimen geometry
. tank geometry
. topology
. . fixed points (mathematics)
. . homotopy theory
. . imbeddings (mathematics)
. . . invariant imbeddings
. . links (mathematics)
. . metric space
. . . Hilbert space
. . . . Sobolev space
. vector analysis
. . collinearity
. . coplanarity
. . curl (vectors)
. . . vorticity
RT analysis (mathematics)
area
bodies of revolution

complex numbers
congruences
coordinates
∞ cross sections
crystal lattices
diagrams
diameters
dimensions
distance
foci
frustums
geoids
geometrical acoustics
hypergeometric functions
hyperspheres
infinity
∞ mathematics
∞ measurement
planforms
Poincare spheres
position (location)
∞ profiles
reciprocal theorems
∞ science
shapes
sides
spheres
∞ surface geometry
surveys
symmetry
toroids
uniqueness theorem
Venn diagrams
volume

geomorphology
DEF A science that deals with the land and submarine relief features of the Earth's surface and genetic interpretation of them through using the principles of physiography in its descriptive aspects and of dynamic and structural geology in its explanatory phases. Used for physiography.
UF *physiography*
GS geology
. **geomorphology**
morphology
. **geomorphology**
RT cones (volcanoes)
contours
geodynamics
geographic distribution
geography
glaciology
isostasy
lunar geology
mountains
orography
photogeology
shatter cones
slumping
terrain
topography
volcanoes
volcanology

Geon (trademark)
USE **polyvinyl chloride**

geophysical fluid flow cells
DEF Apparatus used in model experiments for deep solar convection and Jovian atmospheric circulation for Spacelab 1 and Spacelab 3.
GS payloads
. Spacelab payloads
. . **geophysical fluid flow cells**
RT aerospace environments
∞ cells
convective flow
fluid flow
gas flow
investigation
Jupiter atmosphere
Space Transportation System flights
spaceborne experiments
Spacelab
∞ test equipment

geophysical fluids
DEF General term for the liquids and gases on or in the Earth (from water in all forms, to petroleum and hydrocarbons in liquid and gaseous form, and molten rock material within the Earth).
GS **geophysical fluids**
. crude oil
. ground water
. lava
. magma
. natural gas
. . liquefied natural gas
RT Earth core
fluid dynamics
geothermal resources
geothermal technology

geophysical observatories
GS observatories
. **geophysical observatories**
. . OGO
. . . EGO
. . . OGO–3
. . . OGO–5
. . . OGO–A
. . . POGO
. . . . OGO–4
. . . . OGO–6
. . . . OGO–C
. . OSO
. . . AOSO
. . . OSO–1
. . . OSO–2
. . . OSO–3
. . . OSO–4
. . . OSO–5
. . . OSO–6
. . . OSO–7
. . . OSO–8
. . . OSO–C
RT astronomical observatories
geology
geophysics

geophysical satellites
GS artificial satellites
. **geophysical satellites**
. . Cosmos satellites
. . . Cosmos 2 satellite
. . . Cosmos 3 satellite
. . . Cosmos 5 satellite
. . . Cosmos 6 satellite
. . . Cosmos 14 satellite
. . . Cosmos 44 satellite
. . . Cosmos 54 satellite
. . . Cosmos 71 satellite
. . . Cosmos 110 satellite
. . . Cosmos 137 satellite
. . . Cosmos 144 satellite
. . . Cosmos 149 satellite
. . . Cosmos 166 satellite
. . . Cosmos 186 satellite
. . . Cosmos 188 satellite
. . . Cosmos 206 satellite
. . . Cosmos 213 satellite
. . . Cosmos 224 satellite
. . . Cosmos 225 satellite
. . . Cosmos 381 satellite
. . . Cosmos 954 satellite
. . . Cosmos 1129 satellite
. . . Intercosmos satellites
. . Explorer 6 satellite
. . Explorer 10 satellite
. . Explorer 12 satellite
. . Explorer 45 satellite
. . OGO
. . . EGO
. . . OGO–3
. . . OGO–5
. . . OGO–A
. . . POGO
. . . . OGO–4
. . . . OGO–6
. . . . OGO–C
. . OSO
. . . AOSO
. . . OSO–1
. . . OSO–2
. . . OSO–3
. . . OSO–4
. . . OSO–5
. . . OSO–6
. . . OSO–7
. . . OSO–8
. . . OSO–C
. . Radiation and Meteoroid satellite
. . Sputnik 3 satellite
. . Vanguard 3 satellite
RT Ariel satellites
communication satellites
EOLE satellites
meteorological satellites
PEOLE satellites
space laboratories
unmanned spacecraft
Vanguard satellites

geophysics
DEF The physics of the Earth and its environment, i.e., Earth, air, and (by extension) space. Classically, geophysics is concerned with the nature of and physical occurrences at and below the surface of the Earth including, therefore, geology, oceanography, geodesy, seismology, and hydrology. The trend is to extend the scope of geophysics to include meteorology, geomagnetism, astrophysics, and other sciences concerned with the physical nature of the universe.
RT aeronomy
astrophysics
Chandler wobble
continental drift
Earth (planet)
Earth planetary structure
Earth sciences
field aligned currents
formations
geochemistry
geochronology
geodesy
geodynamics
geoelectricity
geoids
geological surveys
geology
geomagnetism
geophysical observatories
gravimeters
gravimetry
heat transmission
hydrography
hydrology
International Geophysical Year

International Geosphere–Biosphere program
isostasy
limnology
meteorology
Mission to Planet Earth
oceanography
paleomagnetism
petrology
∞ physics
plates (tectonics)
polar cusps
∞ radiation
radioactivity
∞ science
seismology
stratigraphy
structural properties (geology)
tectonics
theoretical physics
tiltmeters
topography

geopotential
DEF The potential energy of a unit mass relative to sea level, numerically equal to the work that would be done in lifting the unit mass from sea level to the height at which the mass is located; commonly expressed in terms of dynamic height or geopotential potential.
GS **geopotential**
. geopotential height
RT Earth gravitation
geoelectricity
gravitational fields
height
∞ potential
potential energy

geopotential height
DEF The height of a given point in the atmosphere in units proportional to the potential energy of unit mass (geopotential) at this height, relative to sea level.
GS geopotential
. **geopotential height**
potential energy
. **geopotential height**
RT atmospheric pressure
Earth atmosphere
Earth gravitation
geodetic accuracy
gravitational fields
head (fluid mechanics)
scale height

Geopotential Research Mission
DEF A NASA gravity field mapping mission utilizing the low–low satellite tracking concept to measure the Doppler shift between two coorbiting polar satellites. Used for Gravsat satellites.
UF *Gravsat satellites*
GS artificial satellites
. scientific satellites
. . **Geopotential Research Mission**
RT gravitation
gravitational fields

geopressure
DEF Pressures that exceed the normal hydrostatic pressure of about 0.465 psi per foot of depth.
GS pressure
. **geopressure**
RT geology
geothermal resources
geothermal technology
pressure gradients

Georgia
GS nations
. United States
. . **Georgia**
RT Atlanta (GA)
Sand Hills Region (GA–NC–SC)

Georgia (Eurasia)
(added August 1993)
GS nations
. **Georgia (Eurasia)**
RT Asia
Europe

GEOS 1 satellite
GS artificial satellites
. geodetic satellites
. . **GEOS 1 satellite**
RT active satellites
ANNA satellites
celestial geodesy
Explorer 29 satellite
LARGOS satellite
PAGEOS satellite

GEOS 2 satellite
UF *GEOS–B satellite*
GS artificial satellites
. geodetic satellites
. . **GEOS 2 satellite**
RT active satellites
ANNA satellites
celestial geodesy
Explorer 36 satellite
LARGOS satellite
PAGEOS satellite

GEOS 3 satellite
UF *GEOS–C satellite*
GS artificial satellites
. geodetic satellites
. . **GEOS 3 satellite**
RT active satellites
ANNA satellites
celestial geodesy
LARGOS satellite
PAGEOS satellite
satellite altimetry

GEOS satellites (ESA)
UF *GEOS satellites (ESRO)*
GS artificial satellites
. ESA satellites
. . **GEOS satellites (ESA)**
ESA spacecraft
. ESA satellites
. . **GEOS satellites (ESA)**
RT Earth magnetosphere
European space programs
Geosari project

GEOS satellites (ESRO)
USE **GEOS satellites (ESA)**

GEOS–B satellite
USE **GEOS 2 satellite**

GEOS–C satellite
USE **GEOS 3 satellite**

GEOS–D satellite
DEF Another in a series of the European Space Agency's geostationary scientific satellites launched by NASA for long–term cosmic radiation studies. Used for Geodynamic Experimental Ocean Satellite.
UF *Geodynamic Experimental Ocean Satellite*
GS artificial satellites
. **GEOS–D satellite**

Geosari project
DEF Launch of GEOS on second development flight of Ariane launcher into a geostationary elliptical orbit in 1979. The name is derived from a combination of GEOS and ARIane.
GS programs
. projects
. . **Geosari project**
RT Ariane launch vehicle
European Space Agency
GEOS satellites (ESA)

Geosat satellites
GS artificial satellites
. geodetic satellites
. . **Geosat satellites**
RT satellite altimetry

geosphere
USE **lithosphere**

Geostationary Operational Environ Sats
USE **GOES satellites**

Geostationary Operatl Environ Satellite B
USE **GOES 2**

geostationary platforms
USE **synchronous platforms**

geostationary satellites
USE **synchronous satellites**

geostrophic wind
DEF The horizontal wind velocity for which the coriolis acceleration exactly balances the horizontal pressure force.
GS wind (meteorology)
. winds aloft
. . **geostrophic wind**
RT baroclinic instability
baroclinic waves
divergence
isobars (pressure)
sea breeze
wind shear

Geosynchronous Earth Orbital Environments
USE **Earth orbital environments**

geosynchronous orbits
GS orbits
. Earth orbits
. . **geosynchronous orbits**
. spacecraft orbits
. . **satellite orbits**
. . . **geosynchronous orbits**
RT circular orbits
equatorial orbits
Infrared Astronomy Satellite
stationary orbits
synchronous platforms
twenty–four hour orbits

geosynclines
DEF Mobile downwarpings of the crust of the Earth, either elongate or basinlike, measured in scores of kilometers, in which sedimentary and igneous rocks accumulate to thicknesses of thousands of meters.
RT anticlines
domes (geology)
∞ layers

strata
stratification
stratigraphy
synclines

geotechnical engineering
DEF The science and practice of that part of civil engineering involving the inter-relationship between a geologic environment and the works of man.
RT foundations
soil mechanics
structural design criteria
structural engineering

geotechnical fabrics
DEF Generic term for a variety of artificial fiber products used in engineering construction of civil works such as embankments. Also called geofabrics, filter cloth, geotextiles and civil engineering fabrics. Used for geofabrics and geotextiles.
UF *geofabrics*
geotextiles
RT fabrics
soil mechanics

geotemperature
DEF Internal temperature of the planet Earth. Used for geothermometry.
UF *geothermometry*
RT geology
geothermal anomalies
temperature

geotextiles
USE **geotechnical fabrics**

geothermal anomalies
GS anomalies
. **geothermal anomalies**
RT geotemperature
geothermal resources
surface temperature
thermal mapping

geothermal energy conversion
GS energy conversion
. **geothermal energy conversion**
RT clean energy
∞ conversion
Earth resources
engines
geothermal technology
heat transfer
heat transmission
ocean thermal energy conversion
thermal energy
turbines
turbogenerators

geothermal energy extraction
DEF The removal for storage and/or utilization of heat from natural sources within the Earth (hot springs, geysers, hot rocks, etc.)
GS extraction
. **geothermal energy extraction**
RT energy conversion
energy technology
geothermal technology
heat exchangers
heat pumps
heat transmission
heating
turbines
turbogenerators
water heating

geothermal energy utilization
DEF Any application of energy derived from sources within the Earth.
GS utilization
. **geothermal energy utilization**
RT cooling
∞ electric power
energy storage
geothermal technology
heat pipes
heat storage
heating
∞ power plants
turbogenerators

geothermal resources
GS heat sources
. thermal resources
. . **geothermal resources**
. . . geysers
resources
. Earth resources
. . thermal resources
. . . **geothermal resources**
. . . . geysers
RT dry heat
∞ energy sources
geophysical fluids
geopressure
geothermal anomalies
heat transmission
hydrothermal systems
thermal energy
thermal mapping
underwater resources
volcanoes

geothermal technology
DEF The gamut of operations involved in the exploration, exploitation, and conversion of energy derived from geothermal sources.
GS technologies
. energy technology
. . **geothermal technology**
RT dry heat
exploration
geophysical fluids
geopressure
geothermal energy conversion
geothermal energy extraction
geothermal energy utilization
geysers
heat sources
heat transfer
ocean thermal energy conversion
resources
thermal resources

geothermometry
USE **geotemperature**

geotropism
GS tropism
. **geotropism**
RT gravitational effects
physiological effects
plants (botany)

GEP telescopes
USE **particle telescopes**

Gerdien arc heaters
USE **arc heating**
heating equipment

Gerdien condensers
GS measuring instruments
. **Gerdien condensers**
RT capacitors
ion density (concentration)

geriatrics
GS medical science
. **geriatrics**
RT aging (biology)
gerontology

German Democratic Republic
USE **East Germany**

German Infrared Laboratory
DEF A proposed infrared telescope for Spacelab that was discontinued in 1985. It superseded the LIRTS (telescope).
GS telescopes
. spaceborne telescopes
. . **German Infrared Laboratory**
RT payloads
space shuttles
Spacelab
West Germany

German space program
(added December 1990)
GS programs
. space programs
. . European space programs
. . . **German space program**
RT East Germany
Germany
Saenger space transportation system
West Germany

germanates
GS germanium compounds
. **germanates**
. . magnesium germanates

germanides
GS germanium compounds
. **germanides**
. . magnesium germanides
RT germanium alloys

germanium
GS chemical elements
. metalloids
. . **germanium**
. . . germanium isotopes

germanium alloys
GS alloys
. **germanium alloys**
RT germanides
silicon alloys

germanium antimonides
GS antimony compounds
. antimonides
. . **germanium antimonides**
germanium compounds
. **germanium antimonides**

germanium chlorides
GS germanium compounds
. **germanium chlorides**
halogen compounds
. chlorine compounds
. . chlorides
. . . **germanium chlorides**
. halides
. . chlorides
. . . **germanium chlorides**

germanium compounds
GS **germanium compounds**
. germanates

. . magnesium germanates
. germanides
. . magnesium germanides
. germanium antimonides
. germanium chlorides
. germanium oxides
. organic germanium compounds
RT ∞ chemical compounds
Group 4A compounds
∞ metal compounds

germanium diodes
UF *germanium rectifiers*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **germanium diodes**
. solid state devices
. . semiconductor devices
. . . **germanium diodes**
rectifiers
. **germanium diodes**
RT junction diodes
transistors

germanium isotopes
GS chemical elements
. metalloids
. . germanium
. . . **germanium isotopes**
. nuclides
. . isotopes
. . . **germanium isotopes**

germanium oxides
GS chalcogenides
. oxides
. . **germanium oxides**
germanium compounds
. **germanium oxides**
RT ∞ oxygen compounds

germanium rectifiers
USE **germanium diodes**

Germany
(added December 1990)
GS nations
. **Germany**
RT Central Europe
East Germany
Europe
German space program
West Germany

germicides
USE **bactericides**

germination
RT crop growth
growth
phytotrons
viability

germinators
USE **phytotrons**

gerontology
RT age factor
aging (biology)
geriatrics
life span

GERT
UF *graphic evaluation and review technique*
RT critical path method
management
management analysis
management methods
management planning
∞ methodology
PERT
project management

Gestalt theory
RT psychotherapy
∞ theories

Get Away Specials (STS)
DEF Low-cost, man-independent Space Shuttle experimental payloads.
GS payloads
. Space Shuttle payloads
. . **Get Away Specials (STS)**
RT OSS-1 payload
Space Shuttle missions
spaceborne experiments
Spacelab
Spacelab payloads

GETOL aircraft
GS ground effect machines
. **GETOL aircraft**
RT ∞ aircraft
∞ subsonic aircraft
vertical takeoff aircraft

getters
DEF Materials which are included in a vacuum system or device for removing gas by sorption.
RT ion pumps
propargyl groups
purification
residual gas
vacuum
vapor traps

geysers
GS heat sources
. thermal resources
. . geothermal resources
. . . **geysers**
resources
. Earth resources
. . thermal resources
. . . geothermal resources
. . . . **geysers**
RT anomalous temperature zones
geothermal technology
hydrogeology
hydrothermal systems

GGG (garnet)
USE **gadolinium–gallium garnet**

Ghana
GS nations
. **Ghana**
RT Africa

ghosts
RT distortion
radar echoes
radio echoes

Giacobini–Zinner comet
GS celestial bodies
. comets
. . **Giacobini–Zinner comet**
RT Draconid meteoroids
solar system

giant stars
GS celestial bodies
. stars
. . giant stars
. . . asymptotic giant branch stars
. . . Omicron Ceti star
. . . red giant stars
. . . . carbon stars
RT cool stars
F stars
G stars
horizontal branch stars
K stars
late stars
M stars
main sequence stars
S stars
subgiant stars
supergiant stars

gibberellins
GS plants (botany)
. fungi
. . **gibberellins**
RT hemostatics
regulators

Gibbs adsorption equation
RT adsorption
∞ equations
∞ Gibbs equations
interfacial tension

∞ **Gibbs equations**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ equations
Gibbs adsorption equation
Gibbs free energy
Gibbs–Helmholtz equations
phase rule

Gibbs free energy
GS heat
. enthalpy
. . **Gibbs free energy**
thermodynamic properties
. enthalpy
. . **Gibbs free energy**
. free energy
. . **Gibbs free energy**
RT ∞ Gibbs equations
Gibbs–Helmholtz equations
Meyer problem

Gibbs phenomenon
RT discontinuity
Fourier series
series (mathematics)

Gibbs–Helmholtz equations
RT electric potential
enthalpy
∞ equations
free energy
∞ Gibbs equations
Gibbs free energy
internal energy
pressure
temperature

Gibraltar
(added February 1992)
GS nations
. United Kingdom
. . **Gibraltar**
RT Europe
Mediterranean Sea
Spain
straits

gimballess inertial navigation
GS navigation
. inertial navigation
. . **gimballess inertial navigation**
RT gyroscopes
inertial platforms
navigation instruments

gimbals
DEF Devices with two mutually perpendicular and intersecting axes of rotation, thus giving free angular movement in two directions, on which engines or other objects may be mounted. In gyros, supports which provide the spin axes with degrees of freedom.
RT bearings
control moment gyroscopes
fluid rotor gyroscopes
gyrodampers
gyroscopes
pivots
stabilized platforms
supports
swivels

Ginga satellite
(added June 1992)
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **Ginga satellite**
Japanese spacecraft
. **Ginga satellite**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Ginga satellite**
RT Japanese space program
x ray astronomy
x ray spectra
x ray stars

Giotto mission
DEF The European Space Agency's mission to fly through the head of Halley's Comet in order to make in situ measurements of the composition and physical state as well as the structures of the head. Included in the onboard equipment are cameras to determine the structures, spectrometers to determine the composition, and a plasma detector and a magnetometer to measure the interactions with the solar wind. The time of encounter with the comet was during the second week of March 1986.
GS ESA spacecraft
. **Giotto mission**
space missions
. flyby missions
. . **Giotto mission**
unmanned spacecraft
. space probes
. . **Giotto mission**
RT Halley's comet

girder webs
GS structural members
. plates (structural members)
. . **girder webs**
webs (supports)
. **girder webs**
RT elastic sheets
girders
metal plates

girders
GS structural members
. **girders**
RT beams (supports)
box beams
girder webs
plates (structural members)
trusses

girdles
RT ∞ belts
pelvis

glacial drift
DEF A general term for drift transported by glaciers or icebergs and deposited directly on land or in seas. Used for drumlins, end moraines, eskers, glaciofluvial deposits, moraines, and Stoss-and-Lee topography.
UF *drumlins*
end moraines
eskers
glaciofluvial deposits
moraines
Stoss-and-Lee topography
RT debris
glaciers
kettles (geology)
land ice
landforms
sea ice
sediments

glaciers
DEF Large masses of ice formed, at least in part, on land by the compaction and recrystallization of snow, moving slowly by creeping downslope or outward in all directions due to the stress of their own weight, and surviving from year to year. Included are small mountain glaciers as well as ice sheets continental in size, and ice shelves which float on oceans but are fed in part by ice formed on land. Used for active glaciers and advancing glaciers.
UF *active glaciers*
advancing glaciers
GS crevasses
. **glaciers**
ice
. **glaciers**
resources
. Earth resources
. . **glaciers**
RT cirques (landforms)
glacial drift
glaciology
land ice
sea ice

glaciofluvial deposits
USE **glacial drift**

glaciology
DEF The study of all aspects of snow and ice; the science that treats quantitatively the whole range of processes associated with all forms of solid existing water.
GS geology
. **glaciology**
RT geomorphology
glaciers
hydrogeology
isostasy

∞ **glands**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT glands (anatomy)
glands (seals)
pump seals

glands (anatomy)
GS anatomy
. **glands (anatomy)**
. . endocrine glands
. . . adrenal gland
. . . gonads
. . . . ovaries
. . . . testes
. . . hypothalamus
. . . pancreas
. . . parathyroid gland
. . . pineal gland
. . . pituitary gland
. . . thymus gland
. . . thyroid gland
. . mammary glands
. . salivary glands
. . sebaceous glands
. . sex glands
. . . gonads
. . . . ovaries
. . . . testes
. . . prostate gland
RT endocrine systems
gastrointestinal system
∞ glands
liver
organs
secretions

glands (seals)
GS seals (stoppers)
. **glands (seals)**
RT ∞ glands
labyrinth seals
O ring seals
packings (seals)
pump seals
sealing

glare
DEF A condition of vision in which there is discomfort or a reduction in ability to see details, objects, or both, caused by an unsuitable distribution or range of luminance, or by extreme conditions in space.
RT brightness
comfort
daylow
electromagnetic radiation
human factors engineering
illuminating
light (visible radiation)
luminance
luster
optical properties
radiance
sky brightness
specular reflection
spread reflection
visibility
vision

glass
GS **glass**
. borosilicate glass
. E glass
. . S glass
. glass fibers
. metallic glasses
. obsidian glass
. Pyroceram (trademark)
. silica glass
. spin glass
. Vycor
RT amorphous materials
ceramics

electrostatic bonding
glass transition temperature
glassware
glassy carbon
Griffith crack
∞ materials
moldavite
obsidian
optical materials
optical properties
photographic plates
porcelain
silicon dioxide
vitreous materials
vitrification

glass coatings
SN (COATINGS CONSISTING OF GLASS)
GS coatings
. **glass coatings**
RT glazes
metallic glasses
protective coatings
silica glass

glass electrodes
GS electrodes
. **glass electrodes**
RT electrochemistry
ion exchanging
silica glass

glass fiber reinforced plastics
GS composite materials
. fiber composites
. . **glass fiber reinforced plastics**
. polymer matrix composites
. . reinforced plastics
. . . **glass fiber reinforced plastics**
plastics
. reinforced plastics
. . **glass fiber reinforced plastics**
RT airframe materials
composite structures
E glass
fiber orientation
fibers
laminates
plastic aircraft structures
pultrusion
reinforcing fibers
S glass
thermoplastic resins
thermosetting resins
woven composites

glass fibers
UF *fiberglass*
GS fibers
. synthetic fibers
. . **glass fibers**
glass
. **glass fibers**
optical materials
. **glass fibers**
RT boron fibers
E glass
gradient index optics
metallic glasses
optical fibers
plastic fibers
reinforcing fibers
S glass
silica glass
Vycor

glass lasers
DEF High power lasers used in laser fusion technology research.
GS stimulated emission devices
. lasers
. . **glass lasers**
RT high power lasers
laser fusion
laser outputs
laser plasma interactions
laser targets
neodymium lasers
optical pumping
pulsed lasers
ultrashort pulsed lasers

glass transition temperature
GS temperature
. **glass transition temperature**
RT curing
epoxy resins
glass
polymer chemistry
polymer physics
temperature effects
transition temperature

glassware
RT borosilicate glass
bottles
burettes
∞ containers
flasks
glass
laboratory equipment
pipettes
silica glass

glassy carbon
DEF Form of carbon with unique properties and characteristics. Formed by carbonizing phenolic resins made by reacting phenols with celluloses, aldehydes, and ketones.
GS composite materials
. **glassy carbon**
RT carbon
glass
∞ materials

Glauber theory
RT approximation
elastic scattering
Pomeranchuk theorem
∞ theories

glaucoma
GS diseases
. eye diseases
. . **glaucoma**
RT intraocular pressure

Glauert coefficient
USE **aerodynamic forces**
Mach number

glazes
GS coatings
. **glazes**
finishes
. **glazes**
RT ceramics
frit
glass coatings
porcelain
protective coatings

glide angles
USE **glide paths**

glide landings
GS landing
. **glide landings**
. . horizontal spacecraft landing
RT aircraft landing
crash landing
ditching (landing)
planetary landing
soft landing
spacecraft landing
water landing

glide paths
DEF Flight paths of aeronautical vehicles in a glide, seen from the side. The paths used by aircraft or spacecraft in approach procedure and which are generated by instrument landing facilities. Used for glide angles and glide slopes.
UF *glide angles*
glide slopes
GS flight paths
. **glide paths**
slopes
. **glide paths**
RT aircraft approach spacing
approach control
approach indicators
gliding
instrument approach
instrument landing systems
terminal guidance

glide slopes
USE **glide paths**

gliders
DEF A heavier-than-air aircraft that is supported in flight by the dynamic reaction of the air against its lifting surface and whose free flight does not depend principally on an engine.
UF *sailplanes*
GS **gliders**
. ASSET gliders
. boostglide vehicles
. . X-20 aircraft
. hang gliders
. HL-10 reentry vehicle
. hypersonic gliders
. . X-20 aircraft
. Janus spacecrsft
. paragliders
. . inflatable gliders
RT aerospace planes
∞ aircraft
flexible wings
free flight
gliding
lifting reentry vehicles
∞ military aircraft
monoplanes
observation aircraft
sails
sailwings
Schleicher aircraft
soaring
∞ subsonic aircraft
towed bodies
∞ winged vehicles

gliding
RT boostglide vehicles
descent
∞ flight
flight paths
free flight
glide paths
gliders

lift
∞ motion
soaring

Glimm method
DEF Numerical technique for solving gas dynamics problems involving hyperbolic systems of conservation laws.
GS analysis (mathematics)
. numerical analysis
. . **Glimm method**
procedures
. **Glimm method**
RT ∞ equations
fluid dynamics
∞ methodology

glint
RT angels (radar)
radar echoes
scintillation

global air pollution
GS pollution
. environment pollution
. . air pollution
. . . **global air pollution**
RT Earth atmosphere
environments
global warming
pollution monitoring
pollution transport

Global Air Sampling Program
UF *GASP*
RT air pollution
air sampling
environmental quality
sampling

Global Atmospheric Research Program
UF *GARP*
GS programs
. **Global Atmospheric Research Program**
. . GARP Atlantic Tropical Experiment
RT aerology
integrated global ocean station systems
meteorology
NASA programs
weather
weather reconnaissance aircraft

Global Communications Antenna Grid (navy)
USE **Seafarer project**

Global Orbiting Navigation Satellite Sys.
USE **GLONASS**

Global Positioning System
DEF A satellite navigation system which will display many (up to 24) satellites in three sets of orbits by means of a precise time standard and three-dimensional information on position and velocity.
GS satellite navigation systems
. **Global Positioning System**
RT autonomous spacecraft clocks
flight paths
GLONASS
navigation
position indicators
positioning
satellite constellations
space navigation
∞ systems

Global Tracking Network
UF *GLOTRAC (tracking network)*
GS networks
. tracking networks
. . **Global Tracking Network**
stations
. tracking stations
. . **Global Tracking Network**
RT data acquisition
ground stations
minitrack system
NASCOM network
optical tracking
radio relay systems
range and range rate tracking
satellite tracking
Space Flight Tracking and Data Network
STDN (network)

global warming
(added December 1989)
GS heating
. atmospheric heating
. . **global warming**
RT atmospheric temperature
climate change
global air pollution
greenhouse effect
Mission to Planet Earth
stratospheric warming

∞ **globes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Earth (planet)
luminaires
maps
spheres

globular clusters
GS celestial bodies
. star clusters
. . **globular clusters**
RT ∞ clusters
color–magnitude diagram
galactic halos
horizontal branch stars
metallicity
star distribution

globules
RT falling spheres
interfacial tension
liquids
microballoons
spheres

globulins
GS biopolymers
. proteins
. . **globulins**
. . . fibrinogen
. . . gamma globulin
organic compounds
. proteins
. . **globulins**
. . . fibrinogen
. . . gamma globulin

glomerulus
GS anatomy
. circulatory system
. . cardiovascular system
. . . blood vessels
. . . . capillaries (anatomy)
. . . . . **glomerulus**
. genitourinary system
. . kidneys
. . . **glomerulus**
RT renal function

GLONASS
(added September 1994)
UF *Global Orbiting Navigation Satellite Sys.*
GS satellite navigation systems
. **GLONASS**
RT Global Positioning System
international cooperation
positioning
Russian Space Program
U.S.S.R. space program

glossaries
USE **dictionaries**

Gloster GA–5 aircraft
USE **GA–5 aircraft**

GLOTRAC (tracking network)
USE **Global Tracking Network**

glottis
GS anatomy
. respiratory system
. . larynx
. . . **glottis**
RT vocal cords

gloves
GS clothing
. **gloves**
RT protective clothing

glow
USE **luminescence**

glow discharges
DEF Electrical discharges that produce luminosity.
GS electric current
. electric discharges
. . **glow discharges**
RT cathode glow
electric arcs
electric corona
electrodeless discharges
Faraday dark space
gas discharges
light sources
plasma display devices
plasma radiation

glucose
GS organic compounds
. carbohydrates
. . sugars
. . . monosaccharides
. . . . hexoses
. . . . . **glucose**

glucosides
UF *glycosides*
GS organic compounds
. carbohydrates
. . **glucosides**
. . . nucleosides
. . . . adenines
. . . . guanosines

glues
GS adhesives
. **glues**
RT pastes
sizing materials
tetraethyl orthosilicate

gluons
DEF The carriers of the strong force which holds atomic nuclei together (holding together groups of quarks making up stable particles, which in turn are bound together in the atomic nuclei).
GS particles
. elementary particles
. . gluons
RT leptons
mesons
quantum chromodynamics
quarks

glutamates
GS esters
. glutamates
RT glutamic acid

glutamic acid
GS acids
. amino acids
. . glutamic acid
organic compounds
. amino acids
. . glutamic acid
RT glutamates

glutamine
GS acids
. amino acids
. . glutamine
organic compounds
. amino acids
. . glutamine

glutathione
GS organic compounds
. coenzymes
. . glutathione
. peptides
. . polypeptides
. . . glutathione

glycerides
GS esters
. glycerides
RT glycerols
nitroglycerin

glycerins
USE **glycerols**

glycerols
UF *glycerins*
RT alcohols
carbohydrates
glycerides
lipids
liquids
nitroglycerin
triacetin

glycidyl azide polymer
(added August 1990)
UF *GAP (propellants)*
RT ∞ polymers
propellant binders
solid rocket binders

glycine
GS acids
. amino acids
. . glycine
organic compounds
. amino acids
. . glycine

glycogens
GS organic compounds
. carbohydrates
. . polysaccharides
. . . glycogens

glycols
GS hydroxyl compounds
. alcohols
. . glycols
RT hydroxyl radicals

glycolysis
GS chemical reactions
. glycolysis
decomposition
. glycolysis

glycosides
USE **glucosides**

gneiss
DEF A foliated rock formed by regional metamorphism, in which bands or lenticles of granular materials alternate with bands or lenticles in which minerals having flaky or elongate prismatic habits predominate. Generally less than 50 percent of the minerals show preferred parallel orientation. Although a gneiss is commonly feldspar- and quartz-rich, the mineral composition is not an essential factor in its definition.
GS rocks
. gneiss
RT soils

gnomonic projection
DEF A projection on a plane tangent to the surface of a sphere having the point of projection at the center of the sphere. Used in cartography and in crystallography.
RT photomapping
∞ projection
projective geometry

gnotobiotics
DEF The study of germ free animals.
RT bacteria
bacteriology
closed ecological systems
controlled atmospheres
isolation
microbiology
microorganisms
sterilization

GNP
USE **gross national product**

goal theory
RT goals
∞ theories

goals
RT achievement
engineering management
goal theory
project planning
purposes
research management

goats
GS animals
. vertebrates
. . mammals
. . . goats
RT grazing
livestock

Gobi desert
GS land
. deserts
. . Gobi desert
RT arid lands
desertification

Goddard experiment package telescope
USE **particle telescopes**

Goddard Trajectory Determination System
UF *GTDS*
RT computer programs
interplanetary trajectories
moon–Earth trajectories
orbit calculation
orbital mechanics
orbital position estimation
spacecraft trajectories
∞ systems
trajectory analysis
trajectory optimization

Goertler instability
UF *Taylor–Goertler instability*
GS stability
. Goertler instability
RT boundary layer stability
boundary layer transition
centrifugal force
flow stability
laminar boundary layer
rotating fluids
rotating liquids
Taylor instability
vortices
wall flow

GOES 1
DEF The first in a series of geostationary operational environmental satellites launched in October 1975. It ceased operation in June of 1977.
GS artificial satellites
. meteorological satellites
. . GOES satellites
. . . GOES 1
. synchronous satellites
. . GOES satellites
. . . GOES 1
RT meteorological satellites

GOES 2
DEF The second in a series of geostationary operational environmental satellites launched in June 1977. Used for Geostationary Operati Environ Satellite B.
UF *Geostationary Operati Environ Satellite B*
GS artificial satellites
. meteorological satellites
. . GOES satellites
. . . GOES 2
. synchronous satellites
. . GOES satellites
. . . GOES 2
RT meteorological satellites
SMS 1
SMS 2

GOES 3
DEF The third in a series of geostationary operational environmental satellites launched in June 1978.
GS artificial satellites
. meteorological satellites
. . GOES satellites
. . . GOES 3
. synchronous satellites
. . GOES satellites

. . . **GOES 3**
RT **meteorological satellites**

GOES 4
DEF The fourth in a series of geostationary operational environmental satellites launched in September 1980.
GS **artificial satellites**
. **meteorological satellites**
. . GOES **satellites**
. . . **GOES 4**
. **synchronous satellites**
. . GOES **satellites**
. . . **GOES 4**
RT **meteorological satellites**

GOES 5
DEF The fifth in a series of geostationary operational environmental satellites launched in May 1981.
GS **artificial satellites**
. **meteorological satellites**
. . GOES **satellites**
. . . **GOES 5**
. **synchronous satellites**
. . GOES **satellites**
. . . **GOES 5**
RT **meteorological satellites**

GOES 6
DEF The sixth in a series of geostationary operational environmental satellites launched in April 1983.
GS **artificial satellites**
. **meteorological satellites**
. . GOES **satellites**
. . . **GOES 6**
. **synchronous satellites**
. . GOES **satellites**
. . . **GOES 6**

GOES 7
GS **artificial satellites**
. **meteorological satellites**
. . GOES **satellites**
. . . **GOES 7**
. **synchronous satellites**
. . GOES **satellites**
. . . **GOES 7**

GOES 8
(added July 1995)
GS **artificial satellites**
. **meteorological satellites**
. . GOES **satellites**
. . . **GOES 8**
. **synchronous satellites**
. . GOES **satellites**
. . . **GOES 8**

GOES 9
(added July 1995)
GS **artificial satellites**
. **meteorological satellites**
. . GOES **satellites**
. . . **GOES 9**
. **synchronous satellites**
. . GOES **satellites**
. . . **GOES 9**

GOES satellites
DEF Geostationary operational environmental satellites. Used for Geostationary Operational Environ Sats.
UF *Geostationary Operational Environ Sats*
GS **artificial satellites**
. **meteorological satellites**
. . GOES **satellites**
. . . GOES 1
. . . GOES 2
. . . GOES 3
. . . GOES 4
. . . GOES 5
. . . GOES 6
. . . GOES 7
. . . GOES 8
. . . GOES 9
. **synchronous satellites**
. . **GOES satellites**
. . . GOES 1
. . . GOES 2
. . . GOES 3
. . . GOES 4
. . . GOES 5
. . . GOES 6
. . . GOES 7
. . . GOES 8
. . . GOES 9
RT ISCCP Project

goggles
GS clothing
. **goggles**
RT **eye protection**
flight clothing
helmets
protective clothing
sunglasses

Golay detector cells
GS **measuring instruments**
. **radiation measuring instruments**
. . **radiation detectors**
. . . **Golay detector cells**
RT **energy absorption films**
pneumatic equipment
radiation absorption

gold
GS **chemical elements**
. **gold**
. . gold isotopes
. . . gold 198
metals
. **noble metals**
. . **gold**
. . . gold isotopes
. . . . gold 198
. **transition metals**
. . **gold**
. . . gold isotopes
. . . . gold 198

gold 198
GS **chemical elements**
. **gold**
. . gold isotopes
. . . **gold 198**
. **nuclides**
. . **isotopes**
. . . gold isotopes
. . . . **gold 198**
. . . **radioactive isotopes**
. . . . **gold 198**
metals
. **noble metals**
. . **gold**
. . . gold isotopes
. . . . **gold 198**
. **transition metals**
. . **gold**
. . . gold isotopes
. . . . **gold 198**

gold alloys
GS **alloys**
. **gold alloys**
RT **copper alloys**
nickel alloys
silver alloys

gold coatings
UF *gold plate*
GS **coatings**
. **metal coatings**
. . **gold coatings**
RT **nickel plate**
protective coatings

gold isotopes
GS **chemical elements**
. **gold**
. . **gold isotopes**
. . . gold 198
. **nuclides**
. . **isotopes**
. . . **gold isotopes**
. . . . gold 198
metals
. **noble metals**
. . **gold**
. . . **gold isotopes**
. . . . gold 198
. **transition metals**
. . **gold**
. . . **gold isotopes**
. . . . gold 198
RT **radioactive isotopes**

gold plate
USE **gold coatings**

Gompertz curves
GS **charts**
. **graphs (charts)**
. . **Gompertz curves**
geometry
. **curves (geometry)**
. . **S curves**
. . . **Gompertz curves**
. **Euclidean geometry**
. . **analytic geometry**
. . . **S curves**
. . . . **Gompertz curves**

gonads
GS **anatomy**
. **genitourinary system**
. . **reproductive systems**
. . . **sex glands**
. . . . **gonads**
. . . . . **ovaries**
. . . . . **testes**
. **glands (anatomy)**
. . **endocrine glands**
. . . **gonads**
. . . . **ovaries**
. . . . **testes**
. . **sex glands**
. . . **gonads**
. . . . **ovaries**
. . . . **testes**
RT **physiological effects**

gondolas
RT **aircraft compartments**
airships
balloons
baskets

goniometers
DEF Instruments for measuring angles.
GS **measuring instruments**
. **goniometers**

. . photogoniometers
. . radiogoniometers
RT angles (geometry)
diffractometers
etalons
interferometers
Mach–Zehnder interferometers
monochromators
optical measuring instruments
refractometers
spectrometers

goodness of fit
DEF The degree to which the observed frequencies of occurrence of events in an experiment correspond to the probabilities in a model of the experiment.
GS statistical analysis
. **goodness of fit**
RT fitting
mathematical models
maximum likelihood estimates
probability distribution functions
probability theory
statistical distributions
statistical tests
variance (statistics)

gores
RT fabrics
parachute fabrics

gorges
USE **canyons**

GOSS (support system)
USE **ground operational support system**

government procurement
GS procurement
. **government procurement**
RT commodities
contracts
federal budgets
services

government/industry relations
RT commerce lab
commercialization
contract negotiation
contractors
contracts
procurement

governments
RT constitution
culture (social sciences)
policies
politics
regimes
voting

governors
USE **speed regulators**

grabens
USE **geological faults**

∞ **grade**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT angles (geometry)
gradients
level (horizontal)
position (title)
quality
slopes

graded index optics
USE **gradient index optics**

gradient index devices
USE **gradient index optics**

gradient index optics
DEF Optical systems with components whose refractive indexes vary continuously within the material used for the optical elements.
UF *graded index optics*
gradient index devices
GRIN (optics)
RT fiber optics
geometrical optics
glass fibers
lens design
lenses
nonlinear optics
optical properties
∞ optics
physical optics
ray tracing
refractivity

gradients
GS **gradients**
. electron density profiles
. potential gradients
. pressure gradients
. temperature gradients
. . thermoclines
RT angles (geometry)
composition (property)
conjugate gradient method
∞ cross sections
differences
distribution (property)
∞ drop
∞ grade
gravity gradiometers
isobars (pressure)
isotherms
level (horizontal)
optimization
∞ profiles
slopes
variations
vector analysis

∞ **gradiometers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED–CONSULT THE TERMS LISTED BELOW)
RT gravity gradiometers
magnetometers

graduation
USE **calibrating**

Graeff calculus
GS analysis (mathematics)
. calculus
. . **Graeff calculus**
. numerical analysis
. . **Graeff calculus**

grafting
RT implantation
insertion

grain boundaries
GS boundaries
. **grain boundaries**
RT crystal dislocations
grain size
intergranular corrosion
interstices
interstitials
precipitates
transgranular corrosion
twinning

grain bridging
USE **crack bridging**

grain size
GS size (dimensions)
. **grain size**
RT grain boundaries
metal fatigue
microstructure
nanocrystals
nanostructure (characteristics)
Ostwald ripening
particle size distribution

∞ **grains**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT crystals
grains (food)
granular materials
particles
propellant grains

grains (food)
GS farm crops
. **grains (food)**
. . barley
. . corn
. . millet
. . oats
. . rice
. . sorghum
. . wheat
RT angiosperms
Earth resources
∞ grains
grasses
seeds

grammars
RT languages
parsing algorithms
semantics
syntax
vowels
words (language)

Granat satellite
(added April 1995)
GS artificial satellites
. Soviet satellites
. . **Granat satellite**
RT French space program
gamma ray astronomy
international cooperation
Mir space station
Russian Space Program
spaceborne astronomy
x ray astronomy

Grand Canyon (AZ)
GS landforms
. canyons
. . **Grand Canyon (AZ)**
RT Arizona

Grand Tours
UF *outer planet missions*
GS space missions
. flyby missions
. . **Grand Tours**
. . . Mariner Jupiter–Saturn flyby
. . . Mariner Jupiter–Uranus flyby

. . . Voyager 1977 mission
RT ∞ missions
outer planets explorers
space flight
Voyager 1 spacecraft
Voyager 2 spacecraft

grand unified theory
DEF A theory describing the unification of gravity with the other elementary forces in physics, i.e., the weak force, the strong force and the electromagnetic force. Used for GUT.
UF *GUT*
GS field theory (physics)
. **grand unified theory**
RT astrophysics
big bang cosmology
broken symmetry
cosmology
Einstein equations
electromagnetic fields
electromagnetic interactions
electromagnetism
gravitation theory
gravitational fields
particle theory
plasma physics
relativity
string theory
strong interactions (field theory)
supersymmetry
symmetry
theoretical physics
weak energy interactions
weak interactions (field theory)

granite
GS rocks
. igneous rocks
. . granite
RT batholiths
Earth resources
soils

grants
DEF Assets bestowed or transferred, such as money or land, for a particular purpose.
RT appropriations
budgeting
contracts
insurance (contracts)
NASA programs
patents
subcontracts

granular materials
RT brittle materials
∞ grains
low density materials
∞ materials
particles
pellets
powder (particles)

graph theory
DEF The mathematical study of the structure of graphs and networks.
RT combinatorial analysis
graphs (charts)
mathematical models
∞ nets
set theory
∞ theories
topology
trees (mathematics)

graphic arts
GS arts
. **graphic arts**
. . animation
. . . computer animation
RT charts
diagrams
drafting (drawing)
drawings
engineering drawings
imagery
inks
motion pictures
multimedia
photography
∞ projection

graphic evaluation and review techniques
USE **GERT**

graphical user interface
(added July 1993)
DEF A man–computer interface which relies on graphical and/or pictorial means for presenting the user with command options and their results. Input to a graphical user interface relies heavily on the use of point–and–click devices (such as a 'mouse'). Most graphical user interfaces are designed to facilitate multitasking through separate application windows (computer programs).
UF *GUI (computers)*
GS interfaces
. **graphical user interface**
. . windows (computer programs)
RT computer graphics
disk operating system (DOS)
display devices
human–computer interface

graphite
GS carbonaceous materials
. **graphite**
. . pyrolytic graphite
minerals
. **graphite**
. . pyrolytic graphite
RT aluminum graphite composites
buckminsterfullerene
carbon
electrodes
fiber composites
fullerenes
graphite–epoxy composites
intercalation
lubricants
moderators
single crystals
solid lubricants
synthetic metals

graphite–epoxy composites
DEF Structural materials composed of epoxy resins reinforced with graphite.
GS composite materials
. polymer matrix composites
. . epoxy matrix composites
. . . **graphite–epoxy composites**
. resin matrix composites
. . **graphite–epoxy composites**
. superhybrid materials
. . **graphite–epoxy composites**
RT braided composites
carbon fiber reinforced plastics
∞ construction materials
epoxy resins
fiber composites
graphite
graphite–polyimide composites
∞ materials
reinforced plastics
reinforcing fibers
sheet molding compounds
woven composites

graphite–polyimide composites
DEF Composite materials utilizing graphite reinforcing fibers in a resin matrix.
GS composite materials
. polymer matrix composites
. . **graphite–polyimide composites**
RT graphite–epoxy composites

graphitization
RT annealing
heat treatment

graphoepitaxy
DEF The use of artificial surface relief structures to induce crystallographic orientation in thin films.
RT amorphous materials
crystal lattices
crystal structure

graphology
GS handwriting
. **graphology**
recognition
. pattern recognition
. . **graphology**
RT character recognition

graphs (charts)
UF *polarization charts*
GS charts
. **graphs (charts)**
. . bond graphs
. . Gompertz curves
. . Mollier diagram
. . Patterson map
RT conformal mapping
∞ curves
fault trees
graph theory
histograms
nomographs
∞ origins
Petri nets
recording instruments
representations
statistical analysis
trees (mathematics)

Grashof number
DEF A nondimensional parameter used in the theory of heat transfer. The Grashof number is associated with the Reynolds number and the Prandtl number in the study of convection.
GS dimensionless numbers
. **Grashof number**
ratios
. **Grashof number**
RT convection
Prandtl number
Reynolds number

grasses
GS plants (botany)
. **grasses**
. . hay
. . reeds (plants)
. . sea grasses
. . sorghum
RT alfalfa
canopies (vegetation)
defoliation
farm crops

farmlands
grains (food)
grasslands
millet
oats
sod

grasshoppers
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **grasshoppers**

grasslands
UF *grazing lands*
meadowlands
prairies
savannahs
GS land
. **grasslands**
. . Llanos Orientales (Colombia)
RT agriculture
crop growth
Earth resources
farm crops
farmlands
grasses
hay
land use
plains
plowing
rangelands
rural areas
rural land use
sod
steppes

Grassmann algebra
USE **vector spaces**

∞ **gratings**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT gratings (spectra)
interference grating
optical filters

gratings (spectra)
UF *diffraction gratings*
GS **gratings (spectra)**
. Bragg gratings
. echelette gratings
. echelle gratings
RT diffraction radiation
Fresnel diffraction
∞ gratings
optical filters
photorefractivity
Ronchi test
Rowland circles

graupel
(added March 1989)
GS precipitation (meteorology)
. **graupel**
RT cloud glaciation
cloud physics
hail
hailstorms
ice formation
ice nuclei
snow

gravel deposits
USE **gravels**

gravels
DEF Coarse, granular aggregates, with pieces larger than sand grains, resulting from the natural erosion of rocks. Used for gravel deposits.
UF *gravel deposits*
GS sediments
. **gravels**
soils
. **gravels**
RT aggregates
alluvium
aquifers
boreholes
fans (landforms)
grit
sands

gravimeters
(added January 1991)
DEF Instruments for measuring variations in the gravitational field, generally by registering differences in the weight of a constant mass as the gravimeter is moved from place to place. Used for gravity meters.
UF *gravity meters*
GS measuring instruments
. **gravimeters**
RT accelerometers
densitometers
geodesy
geophysics
gravimetry
gravitation
microdensitometers

gravimetry
DEF The measurement of gravity or gravitational acceleration, especially in geophysics and geodesy.
RT ∞ acceleration
accelerometers
geology
geophysics
gravimeters
gravitational fields
∞ measurement
networks
quantitative analysis

gravireceptors
DEF Highly specialized nerve endings and receptor organs located in skeletal muscles, tendons, joints, and in the inner ear which furnish information to the brain with respect to body position, equilibrium and the direction of gravitational forces.
GS anatomy
. sense organs
. . **gravireceptors**
. . . otolith organs
receptors (physiology)
. **gravireceptors**
. . otolith organs
RT oculogravic illusions
sensitometry
vertical perception

gravitation
DEF The acceleration produced by the mutual attraction of two masses, and of magnitude inversely proportional to the square of the distance between the two centers of mass. Used for gravity.
UF *gravity*
GS **gravitation**
. artificial gravity
. Earth gravitation
. gravity anomalies
. lunar gravitation
. microgravity
. planetary gravitation
. stellar gravitation
. . solar gravitation
RT antigravity
drag
environments
Geopotential Research Mission
gravimeters
gravitational constant
gravitational effects
gravitational fields
gravitational waves
gravity gradiometers
high gravity environments
isostasy
low weight
Lunar Gravity Simulator
pendulums
Roche limit
similitude law
terminal velocity
weight (mass)
weightlessness

gravitation theory
GS **gravitation theory**
. supergravity
RT bimetric theories
event horizon
gauge theory
grand unified theory
gravitational fields
gravitational wave antennas
gravitinos
gravitons
string theory
supersymmetry
∞ theories
unified field theory

gravitational binding energy
(added May 1995)
GS binding energy
. **gravitational binding energy**
RT accretion disks
astrophysics
binary stars
∞ energy
gravitational collapse
neutron stars
nuclear binding energy
stellar gravitation

gravitational collapse
GS collapse
. **gravitational collapse**
RT astrophysics
black holes (astronomy)
gravitational binding energy
gravitational instability
naked singularities
neutral currents
quasars
relativistic plasmas
stellar cores
stellar interiors
stellar systems
supernovae
white holes (astronomy)

gravitational constant
DEF The coefficient of proportionality in Newton's law of gravitation.
GS constants

. **gravitational constant**
RT big bang cosmology
gravitation

gravitational effects
GS **gravitational effects**
. gravitational lenses
. Lagrangian equilibrium points
. lunar gravitational effects
RT acceleration stresses (physiology)
acceleration tolerance
drop towers
∞ effects
geotropism
gravitation
gravitational instability
gravitational physiology
gravitropism
Gravity Probe B
Langley complex coordinator
lower body negative pressure
orbital resonances (celestial mechanics)
Reissner–Nordstrom solution
stellar mass accretion
stellar systems
swingby technique
weightlessness

gravitational fields
DEF Regions that give rise to forces of gravitational attraction.
UF *gravitational potential*
RT attraction
center of gravity
Earth gravitation
Earth–Moon system
field strength
field theory (physics)
∞ fields
geopotential
geopotential height
Geopotential Research Mission
grand unified theory
gravimetry
gravitation
gravitation theory
gravitational instability
gravitational lenses
gravity anomalies
Lagrangian equilibrium points
multipolar fields
satellite perturbation
Schwarzschild metric
stellar gravitation
unified field theory
Yang–Mills fields

gravitational instability
(added August 1997)
GS dynamic characteristics
. dynamic stability
. . **gravitational instability**
stability
. dynamic stability
. . **gravitational instability**
RT astrophysics
galactic evolution
gravitational collapse
gravitational effects
gravitational fields
interstellar matter
Jeans theory
perturbation
stellar evolution
stellar gravitation

gravitational lenses
GS gravitational effects
. **gravitational lenses**
lenses
. **gravitational lenses**
RT black holes (astronomy)
focusing
gravitational fields
light scattering
neutron stars
relativistic effects
relativity
stellar gravitation
white holes (astronomy)

gravitational physiology
GS physiology
. **gravitational physiology**
RT acceleration stresses (physiology)
aerospace medicine
centrifuging stress
gravitational effects
physiological acceleration
physiological effects
physiological responses
space flight stress
stress (physiology)

gravitational potential
USE **gravitational fields**

gravitational radiation
USE **gravitational waves**

gravitational wave antennas
DEF Devices for receiving propagating gravitational fields produced by some change in the distribution of matter.
GS antennas
. **gravitational wave antennas**
RT antenna design
cryogenic equipment
gravitation theory

gravitational waves
DEF Hypothetical waves that travel at the speed of light, by which gravitational attraction is propagated.
UF *gravitational radiation*
RT celestial bodies
celestial mechanics
Earth–Moon system
gravitation
gravity waves
∞ radiation
∞ waves

gravitinos
GS particles
. elementary particles
. . **gravitinos**
. neutral particles
. . **gravitinos**
RT baryons
cosmology
decoupling
gravitation theory
gravitons
neutrinos
particle mass
supergravity
weak energy interactions

gravitons
DEF The hypothetical elementary units of gravitation which are equivalent in the electrons in electromagnetic theory.
GS particles
. elementary particles
. . **gravitons**
RT atomic structure
gravitation theory
gravitinos
supergravity

gravitropism
GS tropism
. **gravitropism**
RT calmodulin
gravitational effects
plants (botany)
vegetation growth

gravity
USE **gravitation**

gravity anomalies
DEF The differences between the observed values of gravity at different points and the theoretical calculated value. They are based on a simple gravity model, usually modified in accordance with some generalized hypothesis of variation in subsurface density as related to surface topography.
GS anomalies
. **gravity anomalies**
gravitation
. **gravity anomalies**
RT Earth gravitation
gravitational fields
mascons

gravity assist trajectories
USE **swingby technique**

gravity gradient satellites
GS artificial satellites
. **gravity gradient satellites**
. . ATS
. . . ATS 1
. . . ATS 2
. . . ATS 3
. . . ATS 4
. . . ATS 5
. . . ATS 6
. . . ATS 7
. . . ATS 8
. . ORBIS CAL satellite
RT artificial gravity
expulsion
manned spacecraft
OV-1 satellites
OV-2 satellites
OV-3 satellites
OV-4 satellites
OV-5 satellites
satellite attitude control
satellite control
spin reduction
unmanned spacecraft

gravity gradiometers
GS measuring instruments
. **gravity gradiometers**
RT gradients
∞ gradiometers
gravitation

gravity meters
USE **gravimeters**

Gravity Probe B
DEF An experiment designed to measure general relativistic induced torques on a gyroscope in orbit about the Earth.
RT gravitational effects
gyroscopes

NASA programs
relativity

gravity waves
DEF Waves in an interface between fluids of different density in which the restoring force is gravity.
GS elastic waves
. capillary waves
. . **gravity waves**
. . . baroclinic waves
surface waves
. capillary waves
. . **gravity waves**
. . . baroclinic waves
RT cnoidal waves
gravitational waves
Kelvin waves
planetary waves
ripples
traveling ionospheric disturbances
water waves
wind (meteorology)

Gravsat satellites
USE **Geopotential Research Mission**

gray gas
GS gases
. **gray gas**
RT nongray atmospheres
radiation absorption
Rayleigh scattering
thermal absorption

gray scale
DEF Images that are not colored or multispectral.
RT aerial photography
image contrast
image enhancement
image processing
imaging techniques
optical data processing
pattern recognition

grazing
GS ingestion (biology)
. **grazing**
RT animals
cattle
deer
goats
horses
rangelands
rural land use
swine

grazing flow
RT **acoustic attenuation**
acoustic ducts
acoustic impedance
acoustic measurement
acoustic properties
aeroacoustics
∞ flow
noise reduction
orifice flow
resonators
shear flow

grazing incidence
DEF Incidence at a small glancing angle.
GS incidence
. **grazing incidence**
RT aberration
angles (geometry)
grazing incidence telescopes
optical measurement
ray tracing
x ray optics

Grazing Incidence Solar Telescope
USE **GRIST (telescope)**

grazing incidence telescopes
GS telescopes
. **grazing incidence telescopes**
. . GRIST (telescope)
RT grazing incidence
x ray astronomy
x ray telescopes

grazing lands
USE **grasslands**

greases
RT **fats**
kerogen
lubricants
oils
petroleum products
thickeners (materials)

Great Basin (US)
GS landforms
. structural basins
. . **Great Basin (US)**
. terraces (landforms)
. . plateaus
. . . **Great Basin (US)**
regions
. **Great Basin (US)**
RT California
Earth resources
folds (geology)
formations
geology
Nevada
structural properties (geology)
Utah

Great Britain
USE **United Kingdom**

great circles
DEF Circles which intersect a sphere and a plane through its center.
GS geometry
. Euclidean geometry
. . circles (geometry)
. . . **great circles**
RT flight optimization
flight paths
ground tracks
trajectories

Great Lakes (North America)
GS **lakes**
. **Great Lakes (North America)**
. . Lake Erie
. . Lake Huron
. . Lake Michigan
. . Lake Ontario
. . Lake Superior
RT Canada
canals
Earth resources
inland waters
International Field Year for Great Lakes
resources
United States
water flow
water resources

Great Plains Corridor (North America)
GS corridors
. **Great Plains Corridor (North America)**
regions
. **Great Plains Corridor (North America)**
RT agriculture
Canada
plains
rural land use
United States

Great Salt Lake (UT)
GS lakes
. **Great Salt Lake (UT)**
RT Earth resources
hydrology
inland waters
ponds
Utah

Great Smoky Mountains (NC–TN)
GS landforms
. mountains
. . **Great Smoky Mountains (NC–TN)**
RT North Carolina
Tennessee

GREB satellites
SN (GALACTIC RADIATION EXPERIMENTAL BACKGROUND SATELLITES)
UF *Galactic Radiation Exp Background sats*
GS artificial satellites
. **GREB satellites**

Greece
GS nations
. **Greece**
RT Cyprus
Europe
Greek space program

Greek space program
(added August 1990)
GS programs
. space programs
. . European space programs
. . . **Greek space program**
RT Greece

green wave effect
RT annual variations
botany
chlorophylls
∞ effects
foliage
leaves

Green's functions
UF *Green's theorem*
GS analysis (mathematics)
. real variables
. . **Green's functions**
functions (mathematics)
. **Green's functions**
RT differential equations
field theory (algebra)
field theory (physics)
half planes
half spaces
Jacobi integral
many body problem

Green's theorem
USE **Green's functions**

greenhouse effect
DEF The heating of the Earth's surface because outgoing long-wavelength terrestrial

radiation is absorbed and re-emitted by the carbon dioxide and water vapor in the lower atmosphere and eventually returns to the surface.
RT atmospheric heat budget
atmospheric radiation
chlorofluorocarbons
climate change
Earth atmosphere
∞ effects
environment effects
Gaia hypothesis
global warming
insolation
terrestrial radiation
thermal radiation
Venus clouds

greenhouses
DEF Structures enclosed by glass or plastic devoted to the cultivation or protection of tender plants or to the production of plants out of season.
RT buildings
phytotrons
plants (botany)

Greenland
GS landforms
. islands
. . **Greenland**
RT Arctic Ocean
Denmark

Gregorian antennas
GS **antennas**
. **Gregorian antennas**
RT antenna design
antenna feeds
antenna radiation patterns
Cassegrain antennas
microwave antennas

Grenada
(added February 1989)
GS landforms
. **islands**
. . West Indies
. . . **Grenada**
nations
. **Grenada**
RT Caribbean region

grenades
RT ammunition
incendiary ammunition
pyrotechnics

grid generation (mathematics)
(added August 1988)
DEF Numerical generation of curvilinearcoordinate systems for the numerical solution of partial differential equations.
UF *mesh generation (mathematics)*
RT computational fluid dynamics
computational grids
coordinates
finite difference theory
finite element method
multigrid methods
structured grids (mathematics)
unstructured grids (mathematics)

∞ **grids**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT computational grids
coordinates
ionizers
∞ matrices
mesh
reticles
tube grids
turnstile antennas
wire grid lenses

grids (mathematics)
USE **computational grids**

Griffith crack
RT crack closure
crack propagation
fracture mechanics
glass
∞ theories

Griffon aircraft
USE **Nord 1500 aircraft**

Grigg–Skjellerup comet
GS **celestial bodies**
. comets
. . **Grigg–Skjellerup comet**
RT ∞ coma
comet tails
solar system
solar wind

Grignard reactions
GS chemical reactions
. **Grignard reactions**
RT catalysts

GRIN (optics)
USE **gradient index optics**

∞ **grinding**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT grinding (material removal)

grinding (comminution)
UF *pulverizing*
GS comminution
. **grinding (comminution)**
RT atomizing
compounding
crushing
disintegration
grinding (material removal)
mixing

grinding (material removal)
GS **grinding (material removal)**
. metal grinding
RT abrasion
countersinking
cutting
∞ grinding
grinding (comminution)
grooving
machining
metal cutting
micromachining
planing
polishing
scarfing
wear

grinding machines
GS tools
. machine tools
. . **grinding machines**
RT lathes
∞ machinery
metal grinding
milling machines
shapers
ultrasonic cleaning

grinding mills
RT atomizers
atomizing
comminution
crushers
impactors
mixers

Gripen aircraft
USE **JAS-39 aircraft**

GRIST (telescope)
DEF An ESA Spacelab payload designed for grazing incidence solar phenomena. Used for grazing incidence solar telescope.
UF *Grazing Incidence Solar Telescope*
GS telescopes
. grazing incidence telescopes
. . **GRIST (telescope)**
RT energy spectra
solar cosmic rays
Spacelab
sun

grit
RT abrasives
gravels
particles
sands
sediments

grooves
GS **grooves**
. V grooves
. . riblets
RT corrugating
grooving

grooving
UF *fluting*
RT cutting
grinding (material removal)
grooves
knurling
machining
micromachining
milling (machining)
striation

gross national product
DEF The total value of the goods and services produced in a nation during a specific period and also comprising the total expenditures by consumers and government plus gross private investment. Used for GNP.
UF *GNP*
GS products
. **gross national product**
RT commerce
costs
econometrics
finance
industries

ground based control
GS **ground based control**
. air traffic control
. . automated en route ATC
. . radar approach control
RT air traffic controllers (personnel)
aircraft approach spacing
aircraft control
airport surface detection equipment
airport towers
approach
approach control
automatic control

automatic traffic advisory and resolution
∞ control
flight control
flight management systems
fly by wire control
guidance (motion)
instrument landing systems
integrated mission control center
landing aids
missile control
radar navigation
radio control
remote control
spacecraft control
spacecraft guidance
traffic control

ground clouds
USE **exhaust clouds**

ground crews
GS personnel
. **ground crews**
RT maintenance

ground effect (aerodynamics)
DEF Increase in the lift of an aircraft operating close to the ground caused by reaction between high-velocity downwash from its wing or rotor and the ground.
RT aerodynamic drag
aerodynamics
air cushion landing systems
cushions
downwash
drag
∞ effects
ground resonance
jet blast effects
lift
peripheral jet flow
wakes

ground effect (communications)
DEF The effect of ground conditions on radio communications.
RT echoes
∞ effects
electromagnetic interference
electromagnetic noise
radio attenuation
signal fading
wave reflection

ground effect machines
UF *air cushion vehicles*
DTMB-111 ground effect machine
DTMB-430 ground effect machine
hovercraft
GS **ground effect machines**
. Cushioncraft ground effect machine
. GETOL aircraft
. hovercraft ground effect machines
. Westland ground effect machines
RT ∞ aircraft
commercial aircraft
∞ effects
∞ flight vehicles
flying platforms
hovering
lifting rotors
∞ machinery
∞ military aircraft
passenger aircraft
peripheral jet flow
rapid transit systems
research aircraft
∞ subsonic aircraft
surface vehicles
∞ transport vehicles
V/STOL aircraft
∞ vehicles
water takeoff and landing aircraft

ground handling
GS materials handling
. **ground handling**
RT air cargo
baggage
crew procedures (preflight)
∞ facilities
flight operations
hangars
mobile lounges
tractors
trucks

ground operational support system
UF *GOSS (support system)*
GS ground support equipment
. **ground operational support system**
support systems
. **ground operational support system**
weapon systems
. **ground operational support system**
RT ∞ systems

ground penetrating radar
(added August 1995)
DEF A radar imaging technique in which coherent background propagation of the received reflected wavefield forms a spatial image of the scattering interface within the region of interest.
GS radar
. **ground penetrating radar**
RT archaeology
nondestructive tests
planetary mapping
radar geology
soil mapping
synthetic aperture radar
tomography

ground resonance
DEF Mechanical phenomenom occurring when a rotor,operating within a certain speed range, experiences coupling between a rotor in-plane mode and a model support system mode, causing vibration in the system.
RT aerodynamic stability
ground effect (aerodynamics)
helicopters
rotary wings
rotor aerodynamics

ground speed
GS rates (per time)
. **ground speed**
velocity
. **ground speed**
RT airspeed
high speed
low speed

ground squirrels
GS animals
. vertebrates
. . mammals
. . . rodents
. . . . squirrels
. . . . . **ground squirrels**

ground state
GS level (quantity)
. energy levels
. . **ground state**
RT atomic energy levels
atomic theory
electron states
quantum theory

ground stations
GS stations
. **ground stations**
. . Deep Space Instrumentation Facility
. . Earth terminals
. . integrated mission control center
. . polystation doppler tracking system
RT data acquisition
data collection platforms
downlinking
Global Tracking Network
hangars
integrated global ocean station systems
Jodrell Bank Observatory
land mobile satellite service
MSAT
networks
ocean data acquisitions systems
pollution monitoring
Space Flight Tracking and Data Network
tracking stations
weather stations

ground support equipment
DEF That equipment on the ground, including all implements, tools, and devices (mobile or fixed), required to inspect, test, adjust, calibrate, appraise, gage, measure, repair, overhaul, assemble, transport, safeguard, record, store, or otherwise function in support of a rocket, space vehicle, or the like, either in the research and development phase or in operational phase, or in support of the guidance system used with the missile, vehicle, or the like.
GS **ground support equipment**
. ground operational support system
RT air traffic control
aircraft maintenance
airport planning
auxiliary power sources
ballistic cameras
Cape Kennedy launch complex
command and control
command guidance
crawler tractors
Earth terminal measurement system
∞ equipment
flight control
gantry cranes
handling equipment
landing aids
launching bases
launching pads
launching sites
maintenance
missile launchers
missile storage
missiles
ordnance
propellant storage
radio telemetry
refueling
rocket launchers
satellite ground support
∞ spacecraft
storable propellants
∞ test equipment
tracking networks
tracking stations

ground support systems
GS support systems
. **ground support systems**
RT commonality
∞ systems

ground tests
GS **ground tests**
. cold flow tests
. prelaunch tests
. . static firing
RT aircraft runup
captive tests
crew procedures (preflight)
electric equipment tests
engine tests
flight tests
full scale tests
missile tests
prefiring tests
preflight operations
space electric rocket tests
stability tests
static tests
test firing
∞ **tests**
wing flow method tests

ground tracks
DEF The inclination of a satellite, together with its orbital altitude and period of its orbit, create a track defined by an imaginary line connecting the satellite and the Earth's center; the satellite's apparent path over the ground.
GS **ground tracks**
. **satellite** ground tracks
RT **area navigation**
flight paths
great circles
orbits
∞ paths
∞ tracks

ground truth
DEF Data obtained on the ground concerning the significance of anomalies observed in remote sensing to help interpretation.
RT aerial photography
aerial reconnaissance
Airborne Integrated Reconnaissance System
crop identification
imagery
in situ measurement
photointerpretation
photoreconnaissance
spectrophotography

ground water
(added February 1991)
DEF That part of the subsurface water that is in the zone of saturation, including underground streams.
UF *groundwater*
GS geophysical fluids
. **ground water**
water
. **inland waters**
. . **ground water**
RT **aquifers**
Earth resources
fresh water
limnology
lysimeters
potable water
soil pollution
springs (water)
surface water
water flow
water resources
water runoff
water tables
wells

ground wave propagation
GS transmission
. wave propagation
. . **ground wave propagation**
RT radio waves
selective fading
sky waves

ground wind
GS wind (meteorology)
. **ground wind**
RT air currents
atmospheric circulation
cyclones
gust loads
gusts
monsoons
squalls
storms (meteorology)
tornadoes
wind direction
wind effects
wind erosion
wind pressure
wind profiles
wind shear
wind velocity
windmills (windpowered machines)
windpower utilization
windpowered generators

ground–air–ground communication
GS communicating
. **ground–air–ground communication**
telecommunication
. **ground–air–ground communication**
RT aeronautical satellites
air traffic control
aircraft communication
automated en route ATC
communication satellites
discrete address beacon system
optical communication
radio communication
satellite communication
spacecraft communication
voice communication

ground–to–air missiles
USE **surface to air missiles**

groundwater
USE **ground water**

Group 1A compounds
USE **alkali metal compounds**

∞ **Group 1B compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ chemical compounds
copper compounds
noble metals
silver compounds

Group 2A compounds
USE **alkaline earth compounds**

∞ **Group 2B compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cadmium compounds
∞ chemical compounds
mercury compounds
zinc compounds

∞ **Group 3A compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aluminum compounds
boron compounds
∞ chemical compounds
gallium compounds
indium compounds

∞ **Group 3B compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT actinide series compounds
∞ chemical compounds
curium compounds
rare earth compounds
scandium compounds
yttrium compounds

∞ **Group 4A compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT carbon compounds
∞ chemical compounds
germanium compounds
lead compounds
silicon compounds
tin compounds

∞ **Group 4B compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ chemical compounds
hafnium compounds
titanium compounds
zirconium compounds

∞ **Group 5A compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *pnictides*
RT antimony compounds
arsenic compounds
bismuth compounds
∞ chemical compounds
nitrogen compounds
oxynitrides
phosphorus compounds

∞ **Group 5B compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ chemical compounds
niobium compounds
tantalum compounds
vanadium compounds

∞ **Group 6A compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT chalcogenides
∞ chemical compounds
polonium compounds
selenium compounds
sulfur compounds
tellurium compounds

∞ **Group 6B compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ chemical compounds
chromium compounds
molybdenum compounds
tungsten compounds

Group 7A compounds
USE **halogen compounds**

∞ **Group 7B compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ chemical compounds
manganese compounds
rhenium compounds
technetium compounds

∞ **Group 8 compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ chemical compounds
cobalt compounds
iridium compounds
iron compounds
nickel compounds
osmium compounds
platinum compounds
rhodium compounds

group behavior
USE **group dynamics**

group dynamics
UF *group behavior*
RT dependence
∞ dynamics
ethnic factors
problem solving
sociology

group theory
GS algebra
. **group theory**
. . homomorphisms
. . . automorphisms
. . . monoids
. . . subgroups
RT chiral dynamics
chirality
fibers (mathematics)
lie groups
supergravity
supersymmetry
∞ theories

group velocity
DEF The velocity of a wave disturbance as a whole, i.e., of an entire group of component simple harmonic waves.
GS rates (per time)
. **group velocity**
velocity
. **group velocity**
RT beat frequencies
harmonic motion
phase velocity
propagation velocity
quantum mechanics
wave propagation

∞ **groups**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT categories
classes
subdivisions

grout
RT amorphous materials
cements
clays
concretes
∞ construction materials
mortars (material)
mud
plasters
tiles

growth
UF *hypertrophy*
maturing
GS **growth**
. crystal growth
. . Czochralski method
. . directional solidification (crystals)
. . epitaxy
. . . atomic layer epitaxy
. . . electroepitaxy
. . . liquid phase epitaxy
. . . molecular beam epitaxy
. . . vapor phase epitaxy
. . hydrothermal crystal growth
. . protein crystal growth
. . traveling solvent method
. . Verneuil process
. vegetation growth
. . crop growth
RT accumulations
crop calendars
∞ development
evolution (development)
∞ formation
germination
increasing
inflating
ontogeny
phytotrons
shrinkage
sintering
swelling
timber vigor
timberline
trends
viability
warpage
youth

growth chambers
USE **phytotrons**

Grumman aircraft
GS **Grumman aircraft**
. A-6 aircraft
. C-1A aircraft
. C-2 aircraft
. E-2 aircraft
. F-9 aircraft
. F-14 aircraft
. F-111 aircraft
. Jetstream aircraft
. OV-1 aircraft
RT ∞ aircraft
AWACS aircraft

Grumman OV-1C aircraft
USE **OV-1 aircraft**

Grunaisen constant
GS constants
. **Grunaisen constant**
RT compressibility
specific heat
thermal expansion

GTDS
USE **Goddard Trajectory Determination System**

Guadeloupe
GS landforms
. islands
. . West Indies
. . . **Guadeloupe**
nations
. France
. . **Guadeloupe**

Guam
GS landforms
. islands
. . Pacific Islands
. . . **Guam**
nations
. United States
. . **Guam**

guanethidine
GS amines
. diamines
. . guanidines
. . . **guanethidine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **guanethidine**

guanidines
GS amines
. diamines
. . **guanidines**
. . . guanethidine
. . . triaminoguanidinium azide
RT perfluoroguanidine

guanines
GS bases (chemical)
. **guanines**
fungicides
. xanthines
. . **guanines**
nitrogen compounds
. xanthines
. . **guanines**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . purines
. . . . xanthines
. . . . . **guanines**
RT cyclic AMP

guanosines
DEF Guanine riboside; a nucleoside composed of guanine and ribose. Used for vernine.
UF *vernine*
GS organic compounds
. carbohydrates
. . glucosides
. . . nucleosides
. . . . **guanosines**
RT nucleic acids
ribonucleic acids

guards (shields)
RT ∞ barriers
coverings
housings
safety devices
safety management
shielding

Guatemala
GS nations
. **Guatemala**
RT Central America

guayule
DEF A desert shrub native to southwestern United States and north Mexico that produces polymeric isoprene essentially identical to that made by Hevea rubber trees in southeast Asia.
GS plants (botany)
. **guayule**
RT brush (botany)
rubber

GUI (computers)
USE **graphical user interface**

guidance (motion)
DEF The process of directing the movements of an aeronautical vehicle or space vehicle, with particular reference to the selection of a flight path.
GS **guidance (motion)**
. aircraft guidance
. beam rider guidance
. command guidance
. entry guidance (STS)
. inertial guidance
. . strapdown inertial guidance
. injection guidance
. map matching guidance
. midcourse guidance
. reentry guidance
. rendezvous guidance
. spacecraft guidance
. . satellite guidance
. standardized space guidance
. terminal guidance
. . laser guidance
RT air navigation
approach
ascent trajectories
astronics
automatic control
avionics
control surfaces
flight control
flight paths
ground based control
homing
homing devices
impact prediction
landing
manual control
missiles
navigation
∞ platforms
pointing control systems
radio navigation
remote control
stationkeeping
∞ systems
trajectory control
visual control

guidance sensors
RT attitude control
image dissector tubes
optical measuring instruments
∞ sensors
solar sensors
spacecraft instruments
star trackers

guide vanes
DEF Control surfaces that may be moved into or against a rocket's jetstream, used to change the direction of the jet flow for thrust vector control. Used for jetavators.
UF *jetavators*
GS control surfaces
. **guide vanes**
. . jet vanes
vanes
. **guide vanes**
. . jet vanes
RT airfoils
hydrofoils
thrust vector control

guided missile submarines
UF *Polaris submarines*
GS water vehicles
. ships
. . submarines
. . . **guided missile submarines**
. underwater vehicles
. . submarines
. . . **guided missile submarines**
RT fleet ballistic missiles
Poseidon missiles

Guinea
GS nations
. **Guinea**
RT Africa

guinea pigs
GS animals
. vertebrates
. . mammals
. . . rodents
. . . . **guinea pigs**

Gulf of Alaska
GS gulfs
. **Gulf of Alaska**
RT Alaska
Pacific Ocean

Gulf of California (Mexico)
GS gulfs
. **Gulf of California (Mexico)**
RT Mexico
Pacific Ocean

Gulf of Mexico
GS gulfs
. **Gulf of Mexico**
RT Alabama
Caribbean Sea
Florida
Louisiana
Mexico
Mississippi
Rio Grande (North America)
Texas

Gulf Stream
GS circulation
. water circulation
. . water currents
. . . ocean currents
. . . . **Gulf Stream**
RT Atlantic Ocean
Caribbean Sea
Lomonosov current
Sargasso Sea
TOPEX

gulfs
DEF Relatively large parts of oceans or seas extending far into the land, partly enclosed by an extensive sweep of the coasts, and opened to the sea through straits. Gulfs are the largest of various forms of inlets of seas. They are usually larger, more enclosed, and more deeply indented than bays (topographic features).
GS **gulfs**
. Gulf of Alaska
. Gulf of California (Mexico)
. Gulf of Mexico
. Persian Gulf
RT bays (topographic features)
Delaware Bay (US)
inlets (topography)
topography

Gum nebula
GS celestial bodies
. nebulae
. . **Gum nebula**
RT galaxies
irregular galaxies
Orion nebula

gum vulcanizates
USE **vulcanized elastomers**

Gumbel theory
USE **range (extremes)**

gums (substances)
GS **gums (substances)**
. rosin
RT chitin
polysaccharides
rubber
tars

gun launchers
SN (LIMITED TO ORDNANCE DEVICES FOR FIRING MISSILES AND ROCKETS WITH INITIAL ATTITUDE CONTROL)
DEF Ordnance devices for firing missiles and rockets with initial attitude control.
GS launchers
. **gun launchers**
RT artillery
∞ barrels
gunfire
howitzers
hypervelocity launchers
missile launchers
rocket catapults
rocket launchers
Saboi projectiles

gun propellants
UF gunpowder
GS propellants
. **gun propellants**
RT explosives
guns (ordnance)

gun turrets
RT ∞ cupolas
guns (ordnance)
∞ turret

gunfire
RT artillery fire
fire control
firing (lighting)
gun launchers
guns (ordnance)
projectiles

Gunn diodes
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **Gunn diodes**
. . . . transferred electron devices
RT gallium arsenides
negative resistance devices

semiconductor devices

Gunn effect
RT ∞ effects
negative conductance
negative resistance devices
semiconductor devices
semiconductor lasers

gunnery training
GS education
. **gunnery training**
RT artillery
fire control
guns (ordnance)
howitzers
weapons

gunpowder
USE gun **propellants**

∞ **guns**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT crossed field guns
electron guns
gas guns
guns (ordnance)
hypervelocity guns
plasma guns

guns (ordnance)
UF *cannons*
GS **weapons**
. **guns (ordnance)**
. . artillery
. . . howitzers
. . . precision guided projectiles
. . rifles
RT ammunition
explosives
gun propellants
gun turrets
gunfire
gunnery training
∞ guns
heat of combustion
hypervelocity guns
incendiary ammunition
projectiles
propellants
Sabot projectiles

gust alleviators
RT deflectors
gusts
mission adaptive wings
spoilers
turbulent flow
vortex alleviation

gust loads
GS aerodynamic forces
. aerodynamic loads
. . **gust loads**
loads (forces)
. dynamic loads
. . aerodynamic loads
. . . **gust loads**
. . transient loads
. . . **gust loads**
. random loads
. . **gust loads**
RT atmospheric turbulence
blast loads
ground wind
gusts
structural design criteria
wind pressure
wing loading

gustatory perception
USE **taste**

gusts
GS turbulence
. atmospheric turbulence
. . **gusts**
wind (meteorology)
. **gusts**
RT clear air turbulence
ground wind
gust alleviators
gust loads
sea breeze
storm damage
storms
storms (meteorology)
vortex avoidance

GUT
USE **grand unified theory**

Gutenberg zone
GS models
. **Gutenberg zone**
regions
. **Gutenberg zone**
RT acoustic velocity
seismic waves

guy wires
UF **stays**
GS wire
. **guy wires**
RT anchors (fasteners)
structural members

Guyana
UF *British Guinea*
GS nations
. **Guyana**
RT Caribbean region
South America

gymnastics
USE **physical exercise**

gynecology
GS medical science
. **gynecology**
RT **females**
genitourinary system

gypsum
DEF The mineral consisting primarily of fully hydrated calcium sulfate (calcium sulfate dihydrate).
GS minerals
. **gypsum**
plasters
. **gypsum**
RT calcium
chalk
rocks
sedimentary rocks
sulfates

gyrals
USE **gyres**

gyration
GS **gyration**
. precession
. . Larmor precession
. . proton precession
. . quenching (atomic physics)
. revolving
. rotation
. . autorotation
. . corotation
. . counter rotation
. . Earth rotation
. . galactic rotation
. . image rotation
. . lunar rotation
. . molecular rotation
. . muon spin rotation
. . planetary rotation
. . satellite rotation
. . stellar rotation
. . . solar rotation
. . superrotation
RT angular velocity
coning motion
∞ motion
spin dynamics

gyrators
UF *Tellegen theory*
GS microwave equipment
. **gyrators**
. . microwave filters
RT **ferrites**
microwave switching
network analysis
phase shift circuits
waveguides

gyres
DEF Closed circulatory systems in a body of water, larger than an eddy or a whirlpool. There is a circular motion of water in each of the major ocean basins, centered on a subtropical high-pressure region. These movements are generated by connective flow of warm surface water poleward, by the deflective effect of the Earth's rotation and by the effects of prevailing winds. The water within each gyre turns clockwise in the Northern Hemisphere and counterclockwise in the Southern Hemisphere. Acceleration causes sea level to fall along mainland coasts; deceleration leads to rise.
UF *gyrals*
RT air water interactions
coastal currents
Coriolis effect
ocean currents
oceanography

gyro horizons
DEF Artificial horizons or attitude gyroscopes.
GS display devices
. **gyro horizons**
flight instruments
. attitude indicators
. . **gyro horizons**
gyroscopes
. attitude gyros
. . **gyro horizons**
horizon
. **gyro horizons**
measuring instruments
. indicating instruments
. . attitude indicators
. . . **gyro horizons**
navigation aids
. navigation instruments
. . attitude indicators
. . . **gyro horizons**

gyrocompasses
DEF Compasses consisting of a continuously driven Foucault gyroscope whose supporting ring normally confines the spinning axis to a horizontal

plane, so that the Earth's rotation causes the spinning axis to assume a position in a plane passing through the Earth's axis, and thus to point to true north.
GS gyroscopes
. **gyrocompasses**
measuring instruments
. indicating instruments
. . compasses
. . . **gyrocompasses**
navigation aids
. navigation instruments
. . compasses
. . . **gyrocompasses**
RT magnetic compasses
radio direction finders
solar compasses

gyrodampers
DEF Single-gimbal control moment gyros actively controlled to extract the structural vibratory energy through the local rotational deformations of a structure; used in large space structures.
RT control moment gyroscopes
gimbals
gyroscopic stability
structural vibration
vibration damping

Gyrodyne aircraft
DEF A rotorcraft whose rotors are not engine-driven except for initial starting, but are made to rotate by action of the air when the rotorcraft is moving; and whose means of propulsion, consisting usually of conventional propellers, is independent of the rotor system.
GS **Gyrodyne aircraft**
. QH-50 helicopter
RT ∞ aircraft

Gyrodyne DSN-3 helicopter
USE **QH-50 helicopter**

Gyrodyne military aircraft
USE **QH-50 helicopter**

gyrofrequency
DEF The natural period of revolution of a free electron in the Earth's magnetic field.
GS magnetic properties
. gyromagnetism
. . **gyrofrequency**
RT charged particles
magnetolonics

gyrointeraction
USE **magnetic rigidity**

gyromagnetism
GS magnetic properties
. **gyromagnetism**
. . gyrofrequency
RT Larmor radius

gyroplanes
USE **helicopters**

gyros
USE **gyroscopes**

gyroscope fluids
RT damping
∞ fluids
rotary gyroscopes
suspending (hanging)

gyroscopes
DEF Devices which utilize the angular momentum of a spinning mass (rotor) to sense angular motion of its base about one or two axes orthogonal to the spin axis. Used for gyros, gyroscopic drift, and gyrostats.
UF *gyros*
gyroscopic drift
gyrostats
GS **gyroscopes**
. attitude gyros
. . gyro horizons
. control moment gyroscopes
. cryogenic gyroscopes
. electrostatic gyroscopes
. gyrocompasses
. gyroscopic pendulums
. gyrostabilizers
. laser gyroscopes
. nuclear gyroscopes
. optical gyroscopes
. rotary gyroscopes
. . fluid rotor gyroscopes
. tuning fork gyroscopes
RT automatic pilots
gimballess inertial navigation
gimbals
Gravity Probe B
gyroscopic stability
precession
∞ stabilizers
torquers

gyroscopic coupling
GS coupling
. **gyroscopic coupling**
RT navigation

gyroscopic drift
USE **gyroscopes**
gyroscopic stability

gyroscopic pendulums
UF *pendulous gyroscopes*
GS gyroscopes
. **gyroscopic pendulums**
oscillators
. mechanical oscillators
. . pendulums
. . . **gyroscopic pendulums**
RT accelerometers
damping
Schuler tuning

gyroscopic stability
UF *gyroscopic drift*
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . attitude stability
. . . . directional stability
. . . . . **gyroscopic stability**
. . . rotary stability
. . . . **gyroscopic stability**
stability
. dynamic stability
. . motion stability
. . . attitude stability
. . . . directional stability
. . . . . **gyroscopic stability**
. . . rotary stability
. . . . **gyroscopic stability**
RT damping
gyrodampers
gyroscopes
hovering stability
inertial platforms
precession
rotary gyroscopes
Schuler tuning
sea keeping
stabilized platforms
stable oscillations
yo-yo devices

gyrostabilizers
GS gyroscopes
. **gyrostabilizers**
RT navigation aids
sea keeping
stabilized platforms
thrust vector control

gyrostats
USE **gyroscopes**

gyrotrons
USE **cyclotron resonance devices**

gyrotropism
GS tropism
. **gyrotropism**
RT electromagnetic properties
frequency shift

H

H alpha line
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . line spectra
. . . . H lines
. . . . . **H alpha line**
RT absorption spectra
emission spectra
H II regions
solar spectra

H beta line
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . line spectra
. . . . H lines
. . . . . **H beta line**
RT absorption spectra
Balmer series
emission spectra
solar spectra

H gamma line
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . line spectra
. . . . H lines
. . . . . **H gamma line**
RT absorption spectra
Balmer series
emission spectra
solar spectra

H I regions
GS celestial bodies
. nebulae
. . **H I regions**
hydrogen clouds
. **H I regions**
RT clouds
hydrogen atoms
interstellar gas
interstellar matter
neutral atoms
neutral gases
radio spectra

H II regions
GS celestial bodies
. nebulae
. . **H II regions**
hydrogen clouds
. **H II regions**
RT clouds
emission spectra
H alpha line
hydrogen ions
interstellar gas
interstellar matter
ionized gases

H lines
SN (EXCLUDES SURFACES OF CONSTANT MAGNETIC FIELD STRENGTH)
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . line spectra
. . . . **H lines**
. . . . . H alpha line
. . . . . H beta line
. . . . . H gamma line
RT absorption spectra
Balmer series
D lines
emission spectra
K lines
Lyman spectra
Paschen series
Rydberg series
solar spectra
telluric lines

H waves
GS electromagnetic radiation
. **H waves**
oscillations
. transverse oscillation
. . **H waves**
transverse waves
. **H waves**
RT electric field strength

H-1 engine
GS engines
. rocket engines
. . booster rocket engines
. . . **H-1 engine**
. . liquid propellant rocket engines
. . . **H-1 engine**
RT Saturn I launch vehicles
Saturn IB launch vehicles

H-2 orbiting plane
USE **HOPE aerospace plane**

H-13 helicopter
USE OH-13 helicopter

H-17 helicopter
UF *Flying Crane helicopter*
GS Hughes aircraft
. **H-17 helicopter**
jet aircraft
. **H-17 helicopter**
research vehicles
. research aircraft
. . **H-17 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **H-17 helicopter**
RT aircraft

H-19 helicopter
GS passenger aircraft
. **H-19 helicopter**
Sikorsky aircraft
. **H-19 helicopter**
transport aircraft
. **H-19 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **H-19 helicopter**
RT aircraft

H-21 helicopter
USE **CH-21 helicopter**

H-23 helicopter
USE **OH-23 helicopter**

H-25 helicopter
GS Boeing aircraft
. **H-25 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . tandem rotor helicopters
. . . . **H-25 helicopter**
RT antisubmarine warfare aircraft

H-34 helicopter
USE **CH-34 helicopter**

H-43 helicopter
GS Kaman aircraft
. **H-43 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **H-43 helicopter**
RT aircraft

H-51 helicopter
USE **XH-51 helicopter**

H-53 helicopter
UF *CH-53 helicopter*
HRX helicopter
Sikorsky S-65 helicopter
GS passenger aircraft
. **H-53 helicopter**
Sikorsky aircraft
. **H-53 helicopter**
transport aircraft
. **H-53 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **H-53 helicopter**
RT aircraft

H-54 helicopter
GS V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **H-54 helicopter**
RT aircraft

H-58 helicopter
GS passenger aircraft
. **H-58 helicopter**
Sikorsky aircraft
. **H-58 helicopter**
transport aircraft
. **H-58 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **H-58 helicopter**
RT aircraft

H-60 Helicopter
DEF The Black Hawk (Sikorsky) assault helicopter. Used for Black Hawk assault helicopter.
UF *Black Hawk assault helicopter*
Jayhawk helicopter
GS Sikorsky aircraft
. **H-60 Helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters

. . . . **H–60 Helicopter**
RT ∞ **aircraft**
∞ **military aircraft**

H–126 aircraft
UF *Hunting H–126 aircraft*
GS BAC aircraft
. **H–126 aircraft**
jet aircraft
. **H–126 aircraft**
monoplanes
. **H–126 aircraft**
research vehicles
. *research aircraft*
. . **H–126 aircraft**
RT ∞ aircraft
jet flaps

H-II orbiting plane
USE **HOPE aerospace plane**

H-infinity control
(added November 1992)
GS automatic control
. optimal control
. . **H-infinity control**
optimization
. optimal control
. . **H-infinity control**
RT control systems design
control theory
controllers
feedback control
linear quadratic Gaussian control

habitability
RT **ecology**
environmental control
environments
shelters

habitats
SN (LIMITED TO PLANTS AND ANIMALS)
DEF **The areas or types of environment in** which plants or animals normally occur or live.
GS regions
. **habitats**
RT **animals**
∞ biology
botany
conservation
Earth resources
ecology
endangered species
environment effects
environments
wildlife

habits
RT learning
psychological factors

habituation (learning)
GS learning
. **habituation (learning)**
RT conditioning (learning)

hadrons
GS particles
. elementary particles
. . **hadrons**
. . . baryons
. . . . hyperons
. . . . . xi hyperons
. . . . omega–mesons
. . . . rho–mesons
. . . . sigma–mesons
. . . mesons
. . . . eta–mesons
. . . . hyperons
. . . . . xi hyperons
. . . . kaons
. . . . meson resonance
. . . . . X mesons
. . . . muons
. . . . omega–mesons
. . . . pions
. . . . vector mesons
. . . . . rho–mesons
. . . . . sigma–mesons
RT charm (particle physics)
flavor (particle physics)
particle decay
partons
quark parton model
vector dominance model

hafnium
GS **chemical elements**
. **hafnium**
. . hafnium isotopes
metals
. transition metals
. . **hafnium**
. . . hafnium isotopes

hafnium alloys
GS **alloys**
. **hafnium alloys**
RT **heat resistant alloys**
niobium alloys
tantalum alloys
tungsten alloys
zirconium alloys

hafnium carbides
GS carbon compounds
. carbides
. . hafnium carbides
hafnium compounds
. **hafnium carbides**

hafnium compounds
GS **hafnium compounds**
. hafnium carbides
. hafnium iodides
. hafnium oxides
RT ∞ chemical compounds
Group 4B compounds
∞ metal compounds

hafnium iodides
GS hafnium compounds
. **hafnium iodides**
halogen compounds
. halides
. . metal halides
. . . **hafnium iodides**
. iodine compounds
. . iodides
. . . **hafnium iodides**

hafnium isotopes
GS chemical elements
. hafnium
. . **hafnium isotopes**
. nuclides
. . isotopes
. . . **hafnium isotopes**
metals
. transition metals
. . hafnium
. . . **hafnium isotopes**

hafnium oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **hafnium oxides**
hafnium compounds
. **hafnium oxides**

hahnium
(added November 1994)
GS chemical elements
. **hahnium**
RT ∞ elements

hail
DEF Precipitation in the form of spheroidal layered ice pellets that usually fall from cumulonimbus clouds during thunderstorms. The layered structure of hail is produced by **successive** accretions of clear and frothy ice.
UF *hailstones*
GS precipitation (meteorology)
. **hail**
RT cloud glaciation
graupel
hailstorms
ice formation
storms (meteorology)
thunderstorms

hailstones
USE **hail**

hailstorms
GS storms
. storms (meteorology)
. . **hailstorms**
RT climatology
graupel
hail
meteorology
precipitation (meteorology)
rainstorms
storm damage
storm enhancement
storm suppression
thunderstorms

hair
GS fibers
. **hair**
RT keratins
skin (anatomy)
wool

hairpin vortices
USE **horseshoe vortices**

Haiti
GS landforms
. islands
. . West Indies
. . . **Haiti**
nations
. **Haiti**
RT Caribbean region
Caribbean Sea

HAL/S (language)
DEF Programming language developed for the flight software of the NASA Space Shuttle program.
GS languages
. programming languages
. . **HAL/S (language)**
RT computer programming
computers

Halden Boiling Water Reactor
UF *Halden reactor*
HBWR reactor
GS nuclear reactors

. liquid cooled reactors
. . water cooled reactors
. . . boiling water reactors
. . . . **Halden Boiling Water Reactor**

Halden reactor
USE **Halden Boiling Water Reactor**

half cones
GS cones
. **half cones**
RT aerodynamic configurations
circular cones
conics
nose cones

half life
DEF The average time required for one half the atoms in a sample of radioactive element to decay.
GS life (durability)
. **half life**
RT decay
nuclear reactions
post-blast nuclear radiation
radiative lifetime
radioactive age determination
radioactive decay
radioactivity
reaction kinetics

half planes
GS analysis (mathematics)
. **half planes**
RT boundary value problems
coordinates
differential equations
Green's functions

half spaces
GS analysis (mathematics)
. **half spaces**
RT boundary value problems
coordinates
elliptic differential equations
fractals
Green's functions

halides
GS halogen compounds
. **halides**
. . bromides
. . . ammonium bromides
. . . cesium bromides
. . . chromium bromides
. . . dibromides
. . . hydrobromic acid
. . . hydrobromides
. . . magnesium bromides
. . . potassium bromides
. . . silver bromides
. . . sodium bromides
. . . strontium bromides
. . chlorides
. . . aluminum chlorides
. . . ammonium chlorides
. . . beryllium chlorides
. . . boron chlorides
. . . cadmium chlorides
. . . calcium chlorides
. . . carbon tetrachloride
. . . copper chlorides
. . . dichlorides
. . . germanium chlorides
. . . hydrochlorides
. . . hydrogen chlorides
. . . . hydrochloric acid
. . . iron chlorides
. . . lanthanum chlorides
. . . lead chlorides
. . . lithium chlorides
. . . magnesium chlorides
. . . nitrosyl chlorides
. . . nitroxychlorides
. . . nitryl chlorides
. . . phosgene
. . . potassium chlorides
. . . silicon tetrachloride
. . . silver chlorides
. . . sodium chlorides
. . . sulfur chlorides
. . . tetrachlorides
. . . titanium chlorides
. . . tungsten chlorides
. . . zinc chlorides
. . fluorides
. . . antimony fluorides
. . . barium fluorides
. . . boron fluorides
. . . chlorine fluorides
. . . compound A
. . . cryolite
. . . deuterium fluorides
. . . difluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . hydrofluoric acid
. . . metal fluorides
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . nitrogen fluorides
. . . nitryl fluorides
. . . oxyfluorides
. . . oxygen fluorides
. . . ozone fluoride
. . . perchloryl fluorides
. . . polyvinyl fluoride
. . . sulfur fluorides
. . . . sulfur hexafluoride
. . . technetium fluorides
. . metal halides
. . . alkali halides
. . . . cesium halides
. . . . . cesium bromides
. . . . . cesium fluorides
. . . . . cesium iodides
. . . . potassium iodides
. . . . sodium bromides
. . . . sodium chlorides
. . . . sodium fluorides
. . . . sodium iodides
. . . aluminum chlorides
. . . barium fluorides
. . . beryllium chlorides
. . . cadmium chlorides
. . . calcium chlorides
. . . chromium bromides
. . . copper chlorides
. . . hafnium iodides
. . . iron chlorides
. . . lanthanum chlorides
. . . lead chlorides
. . . lithium chlorides
. . . magnesium bromides
. . . metal fluorides
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . niobium iodides
. . . potassium bromides
. . . potassium chlorides
. . . silver halides
. . . . silver bromides
. . . . silver chlorides
. . . . silver iodides
. . . strontium bromides
. . . technetium fluorides
. . . titanium chlorides
. . . tungsten halides
. . . . tungsten chlorides
. . . . tungsten fluorides
. . . zinc chlorides
. . . zirconium iodides
. . oxyhalides
RT halogens
molten salts
nitrosyls

halites
UF *rock salt*
RT molten salts
∞ salts

Hall accelerators
RT∞ accelerators
alpha plasma devices
magnetohydrodynamics
plasma physics

Hall coefficient
USE **Hall effect**

Hall currents
USE **electric current**
Hall effect

Hall effect
DEF The electrical polarization of a horizontal conducting sheet of limited extent, when that sheet moves laterally through a magnetic field having a component vertical to the sheet. The Hall effect is important in determining the behavior of the electrical currents generated by winds in the lower

atmosphere. Used for Hall coefficient and Hall currents.
UF *Hall coefficient*
Hall currents
RT carrier mobility
∞ effects
galvanomagnetic effects
magnetohydrodynamics
mobility
polarization (charge separation)
semiconductor devices
transport properties

Hall generators
DEF Hall plates, together with leads, and where used, encapsulation and ferrous or nonferrous backing plates.
RT circulators (phase shift circuits)
Faraday effect
∞ generators
plasma generators
signal generators

Hallam Nuclear Power Facility
UF *HNPF (Hallam Nuclear Power Facility)*
GS electric power plants
. nuclear power plants
. . **Hallam Nuclear Power Facility**
nuclear electric power generation
. nuclear power plants
. . **Hallam Nuclear Power Facility**
RT∞ power plants
sodium graphite reactors

Halley's comet
DEF A member of the solar system with an orbit and a period of about 76 years. It appeared in 1985–1986.
GS celestial bodies
. comets
. . **Halley's comet**
RT Giotto mission
solar system
Vega project

hallucinations
GS psychological effects
. illusions
. . **hallucinations**
RT signs and symptoms

Halo Orbit space station
GS artificial satellites
. space stations
. . **Halo Orbit space station**
stations
. space stations
. . **Halo Orbit space station**
RT lunar spacecraft

halocarbons
DEF Compounds consisting of halogen atoms and carbon atoms.
GS carbon compounds
. **halocarbons**
. . chlorocarbons
. . chlorofluorocarbons
. . fluorocarbons
halogen compounds
. **halocarbons**
. . chlorocarbons
. . chlorofluorocarbons
. . fluorocarbons
RT bromine compounds
∞ chemical compounds
chlorine compounds
fluorine compounds
fluoro compounds
iodine compounds

HALOE
USE **Halogen Occultation Experiment**

halogen compounds
UF *Group 7A compounds*
GS **halogen compounds**
. bromine compounds
. . bromates
. . bromides
. . . ammonium bromides
. . . cesium bromides
. . . chromium bromides
. . . dibromides
. . . hydrobromic acid
. . . hydrobromides
. . . magnesium bromides
. . . potassium bromides
. . . silver bromides
. . . sodium bromides
. . . strontium bromides
. chlorine compounds
. . chlorates
. . chlorides
. . . aluminum chlorides
. . . ammonium chlorides
. . . beryllium chlorides
. . . boron chlorides
. . . cadmium chlorides
. . . calcium chlorides
. . . carbon tetrachloride
. . . copper chlorides
. . . dichlorides
. . . germanium chlorides
. . . hydrochlorides
. . . hydrogen chlorides
. . . . hydrochloric acid
. . . iron chlorides
. . . lanthanum chlorides
. . . lead chlorides
. . . lithium chlorides
. . . magnesium chlorides
. . . nitrosyl chlorides
. . . nitroxychlorides
. . . nitryl chlorides
. . . phosgene
. . . potassium chlorides
. . . silicon tetrachloride
. . . silver chlorides
. . . sodium chlorides
. . . sulfur chlorides
. . . tetrachlorides
. . . titanium chlorides
. . . tungsten chlorides
. . . zinc chlorides
. . chlorine fluorides
. . chlorine oxides
. . chlorocarbons
. . chlorosilanes
. . DDT
. . meclizine
. . perchlorates
. . . aluminum perchlorates
. . . ammonium perchlorates
. . . hydrazine perchlorates
. . . hydrogen perchlorate
. . . hydroxylammonium perchlorates
. . . lithium perchlorates
. . . magnesium perchlorates
. . . nitronium perchlorate
. . . potassium perchlorates
. . trichloroethylene
. fluorine compounds
. . fluorides
. . . antimony fluorides
. . . barium fluorides
. . . boron fluorides
. . . chlorine fluorides
. . . compound A
. . . cryolite
. . . deuterium fluorides
. . . difluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . hydrofluoric acid
. . . metal fluorides
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . nitrogen fluorides
. . . nitryl fluorides
. . . oxyfluorides
. . . oxygen fluorides
. . . ozone fluoride
. . . perchloryl fluorides
. . . polyvinyl fluoride
. . . sulfur fluorides
. . . . sulfur hexafluoride
. . . technetium fluorides
. . fluorite
. . fluoro compounds
. . . cryolite
. . . difluoro compounds
. . . . perfluoroalkane
. . . . polytetrafluoroethylene
. . . . . teflon (trademark)
. . . fluorine organic compounds
. . . . fluoroamines
. . . . . nitrofluoramines
. . . . . trifluoroamine oxide
. . . . fluorocarbons
. . . . fluorohydrocarbons
. . . . . carbon tetrafluoride
. . . . . chlorofluoromethane
. . . . . polytetrafluoroethylene
. . . . . teflon (trademark)
. . . . fluoropolymers
. . . . . polytetrafluoroethylene
. . . . . teflon (trademark)
. . . . . KEL-F
. . . . . polyvinyl fluoride
. . . . perfluoroalkane
. . . . perfluoroguanidine
. . . fluorosilicates
. . . tetrafluorohydrazine
. halides
. . bromides
. . . ammonium bromides
. . . cesium bromides
. . . chromium bromides
. . . dibromides
. . . hydrobromic acid
. . . hydrobromides
. . . magnesium bromides

. . . potassium bromides
. . . silver bromides
. . . sodium bromides
. . . strontium bromides
. . chlorides
. . . aluminum chlorides
. . . ammonium chlorides
. . . beryllium chlorides
. . . boron chlorides
. . . cadmium chlorides
. . . calcium chlorides
. . . carbon tetrachloride
. . . copper chlorides
. . . dichlorides
. . . germanium chlorides
. . . hydrochlorides
. . . hydrogen chlorides
. . . . hydrochloric acid
. . . iron chlorides
. . . lanthanum chlorides
. . . lead chlorides
. . . lithium chlorides
. . . magnesium chlorides
. . . nitrosyl chlorides
. . . nitroxychlorides
. . . nitryl chlorides
. . . phosgene
. . . potassium chlorides
. . . silicon tetrachloride
. . . silver chlorides
. . . sodium chlorides
. . . sulfur chlorides
. . . tetrachlorides
. . . titanium chlorides
. . . tungsten chlorides
. . . zinc chlorides
. . fluorides
. . . antimony fluorides
. . . barium fluorides
. . . boron fluorides
. . . chlorine fluorides
. . . compound A
. . . cryolite
. . . deuterium fluorides
. . . difluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . hydrofluoric acid
. . . metal fluorides
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . nitrogen fluorides
. . . nitryl fluorides
. . . oxyfluorides
. . . oxygen fluorides
. . . ozone fluoride
. . . perchloryl fluorides
. . . polyvinyl fluoride
. . . sulfur fluorides
. . . . sulfur hexafluoride
. . . technetium fluorides
. . metal halides
. . . alkali halides
. . . . cesium halides
. . . . . cesium bromides
. . . . . cesium fluorides
. . . . . cesium iodides
. . . . potassium iodides
. . . . sodium bromides
. . . . sodium chlorides
. . . . sodium fluorides
. . . . sodium iodides
. . . aluminum chlorides
. . . barium fluorides
. . . beryllium chlorides
. . . cadmium chlorides
. . . calcium chlorides
. . . chromium bromides
. . . copper chlorides
. . . hafnium iodides
. . . iron chlorides
. . . lanthanum chlorides
. . . lead chlorides
. . . lithium chlorides
. . . magnesium bromides
. . . metal fluorides
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . niobium iodides
. . . potassium bromides
. . . potassium chlorides
. . . silver halides
. . . . silver bromides
. . . . silver chlorides
. . . . silver iodides
. . . strontium bromides
. . . technetium fluorides
. . . titanium chlorides
. . . tungsten halides
. . . . tungsten chlorides
. . . . tungsten fluorides
. . . zinc chlorides
. . . zirconium iodides
. . oxyhalides
. halocarbons
. . chlorocarbons
. . chlorofluorocarbons
. . fluorocarbons
. iodine compounds
. . iodates
. . . lithium iodates
. . iodides
. . . cesium iodides
. . . gallamine triethiodide
. . . hafnium iodides
. . . niobium iodides
. . . potassium iodides
. . . silver iodides
. . . sodium iodides
. . . zirconium iodides
. . iodoacetic acid
. nitrosyls
. . nitrosyl chlorides
RT ∞ chemical compounds

Halogen Occultation Experiment
DEF Shuttle experiment to provide global stratospheric vertical concentration profiles of key chemical species involved in the catalytic destruction of ozone due to chlorine compounds. Used for HALOE.
UF *HALOE*
GS payloads
. Space Shuttle payloads
. . **Halogen Occultation Experiment**
RT ozone

halogenation
GS chemical reactions
. **halogenation**
. . bromination
. . chlorination
. . fluorination
RT defluorination
halogens

halogens
GS chemical elements
. **halogens**
. . astatine
. . bromine
. . . bromine isotopes
. . chlorine
. . fluorine
. . . fluorine isotopes
. . . liquid fluorine
. . iodine
. . . iodine isotopes
. . . . iodine 125
. . . . iodine 131
. . . . iodine 132
RT excimer lasers
halides
halogenation

halophiles
RT agriculture
plants (botany)

halos
GS scattering
. wave scattering
. . electromagnetic scattering
. . . light scattering
. . . . **halos**
transmission
. electromagnetic wave transmission
. . light transmission
. . . light scattering
. . . . **halos**
. wave propagation
. . light scattering
. . . **halos**
RT astronomy
atmospheric scattering
coronas
galactic halos
haze
images
rainbows

Halphen method
RT∞ methodology

Hamburger aircraft
GS **Hamburger aircraft**
. C–160 aircraft
. HFB–320 aircraft
RT∞ aircraft

Hamburger HFB–320 aircraft
USE **HFB–320 aircraft**

Hamilton–Jacobi equation
RT∞ equations
equations of motion
Hamiltonian functions
relativistic particles

Hamiltonian functions
GS functions (mathematics)
. **Hamiltonian functions**
RT classical mechanics
cluster variation method
∞ dynamics
Hamilton–Jacobi equation
quantum theory
von Zeipel method

hammerhead configuration
RT forebodies
missile configurations

hammers
GS tools
. **hammers**
. . electromagnetic hammers
RT impactors
presses
rams (presses)

hamsters
GS animals
. vertebrates
. . mammals
. . . rodents
. . . . **hamsters**

hand (anatomy)
GS anatomy
. limbs (anatomy)
. . **hand (anatomy)**
. . . fingers
appendages
. **hand (anatomy)**
. . fingers
RT wrist

handbooks
GS documents
. **handbooks**
. . user manuals (computer programs)
RT bibliographies
directories
indexes (documentation)
manuals
subjects
textbooks
training analysis

handedness
RT chirality
lateral stability

handicaps
USE **disabilities**

handles
RT knobs
levers
manual control

Handley Page aircraft
GS **Handley Page aircraft**
. HP–115 aircraft
. Victor MK–1 aircraft
RT∞ aircraft

Handley Page HP–115 aircraft
USE **HP–115 aircraft**

handling equipment
GS **handling equipment**
. cranes
. . gantry cranes
RT crawler tractors
∞ equipment
ground support equipment
harbors
locomotives
propellant storage
∞ storage
tractors
transportation

handling qualities
USE **controllability**

hands (robotics)
USE **end effectors**

handwriting
GS **handwriting**
. graphology
RT character recognition
orthography

Hanford reactors
GS nuclear reactors
. **Hanford reactors**
RT reactor design
reactor physics
reactor technology

hang gliders
DEF Ultralight, unpowered aircraft in which the pilot controls the flight attitude and glide path by shifting his position on a suspended seat (swing seat).
GS gliders
. **hang gliders**
RT∞ aircraft
flexible wings
free flight
man powered aircraft
parawings
sailwings
soaring
ultralight aircraft
∞ winged vehicles

hangars
(added December 1990)
UF *aircraft hangars*
RT airfield surface movements
airports
buildings
ground handling
ground stations
heliports
military air facilities

Hankel functions
GS analysis (mathematics)
. complex variables
. . Bessel functions
. . . **Hankel functions**
. real variables
. . Bessel functions
. . . **Hankel functions**
functions (mathematics)
. **Hankel functions**
RT boundary value problems
differential equations
orthogonal functions

Hansen lunar theory
RT Earth orbits
orbital mechanics
perturbation theory
∞ theories

haploscopes
GS measuring instruments
. optical measuring instruments
. . **haploscopes**
optical equipment
. optical measuring instruments
. . **haploscopes**
RT astigmatism
binocular vision
eye examinations
∞ instruments
optometry

harbors
DEF Small bays or sheltered parts of seas, lakes, or other large bodies of water, usually well protected either naturally or artifically against high waves and strong currents. Harbors are furnished deep enough to provide safe anchorage for ships; especially such places in which port facilities are furnished.
GS waterways
. **harbors**
. . artificial harbors
RT boats
breakwaters
cargo
dredging
estuaries
freighters
handling equipment
marine transportation
oceanography
∞ ports
regional planning
ship terminals
ships
tanker ships
terminal facilities
traffic
∞ travel
water vehicles
wharves

hard coal
USE **anthracite**

hard landing
DEF An impact landing of a spacecraft on the surface of a planet or natural satellite destroying all equipment except possibly a very rugged package.
GS landing
. **hard landing**
RT aircraft landing
crash landing
lunar landing
planetary landing
soft landing
spacecraft landing
water landing

hardeners
RT alloys
hardening (materials)
heat treatment

∞ **hardening**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT hardening (materials)
hardening (systems)

hardening (materials)
UF *metal hardening*
GS **hardening (materials)**
. carburizing
. cold hardening
. hot pressing
. . hot isostatic pressing
. nitriding
. precipitation hardening
. . maraging
. pulse heating
. shot peening
. siliconizing
. work hardening
. . strain hardening
RT aging (materials)
aging (metallurgy)
annealing
coagulation
dispersion strengthening
hardeners
∞ hardening
heat treatment
martensite
metal working
∞ metallurgy
microstructure
normalizing (heat treatment)
oxide dispersion strengthening
peening
quenching (cooling)
∞ setting
softening
tempering

hardening (systems)
DEF Techniques for decreasing the susceptibility or vulnerability of weapon systems and components.
GS **hardening (systems)**
. radiation hardening
RT ∞ hardening
missile defense
nuclear warfare
∞ systems

hardness
DEF Resistance of metal to plastic deformation usually by indentation. However, the term may also refer to stiffness or temper, or to resistance to scratching, abrasion, or cutting.
GS mechanical properties
. **hardness**
. . Knoop hardness
. . microhardness
. . Rockwell hardness
RT abrasion resistance
brittle materials
brittleness
Charpy impact test
cold hardening
ductility
fatigue (materials)
fracture strength
impact strength
indentation
notch tests
plastic properties
softness
surface properties
temper (metallurgy)
toughness
wear
wear resistance

hardness tests
RT compression tests
high temperature tests
impact tests
Knoop hardness
low temperature tests
∞ materials tests
nondestructive tests
static tests
∞ tests
wear tests

hardware
DEF Physical equipment as contrasted to ideas or design that may exist only on paper.
RT computers
electronic modules
∞ equipment
firmware
fixtures
tools

hardware description languages
(added January 1994)
DEF Formal languages and notations used in the specification, design, simulation, and documentation of computer hardware systems and their component circuits.
UF *HDL (computers)*
VHDL (computers)
GS languages
. **hardware description languages**
RT computer design
computer systems simulation
formalism
integrated circuits
logic design
very large scale integration

hardware utilization lists
UF *HUL*
GS lists
. **hardware utilization lists**
RT ∞ catalogs
documents

Harleton meteorite
GS celestial bodies
. meteorites
. . stony meteorites
. . . chondrites
. . . . **Harleton meteorite**
RT iron meteorites

harmonic analysis
DEF A statistical method for determining the amplitude and period of certain harmonic or wave components in a set of data with the aid of Fourier series.
GS analysis (mathematics)
. functional analysis
. . **harmonic analysis**
. . . tesseral harmonics
. . . zonal harmonics
RT Banach space
form factors
Fourier analysis
frequency analyzers
microwave resonance

harmonic control
RT ∞ control
harmonic oscillation
harmonics
helicopter control
rotary wings
vibration damping

harmonic excitation
GS excitation
. wave excitation
. . **harmonic excitation**
harmonics
. **harmonic excitation**
RT acoustics
Fourier analysis
simple harmonic motion

harmonic functions
DEF Any solution of the Laplace equations.
GS analysis (mathematics)
. complex variables
. . **harmonic functions**
functions (mathematics)
. **harmonic functions**
RT Airy function
Fourier analysis
Laplace equation
maximum principle

harmonic generations
GS harmonics
. **harmonic generations**
RT acoustics
carrier frequencies
Fourier analysis
phase matching
wave generation

harmonic generators
RT comparators
frequency converters
∞ generators
harmonics
oscillators
subharmonic generators

harmonic motion
DEF The projection on a diameter of the circle of such motion.
GS **harmonic motion**
. simple harmonic motion
RT group velocity
∞ motion

harmonic oscillation
GS harmonics
. **harmonic oscillation**
oscillations
. **harmonic oscillation**
RT acoustics
Fourier analysis
harmonic control
transverse oscillation

harmonic oscillators
GS oscillators
. **harmonic oscillators**
RT harmonics
mechanical oscillators
subharmonic generators

harmonic radiation
RT electromagnetic radiation
∞ radiation

harmonics
DEF Eigenfrequency oscillations excited in a vibrating system. Used for overtones.
UF overtones
GS **harmonics**
. harmonic excitation
. harmonic generations

. harmonic oscillation
. simple harmonic motion
. spherical harmonics
. superharmonics
. tesseral harmonics
. zonal harmonics
RT acoustics
cycles
Fourier analysis
frequencies
harmonic control
harmonic generators
harmonic oscillators
nodes (standing waves)
resonant frequencies
sound–sound interactions
standing waves
subaudible frequencies
subharmonic generators
vibration
wavelengths

harnesses
RT couches
safety devices
seat belts
seats
transmission lines

Harpoon missile
GS missiles
. air to surface missiles
. . **Harpoon missile**
RT surface to surface missiles
weapon systems

Harrier aircraft
(added February 1993)
UF *AV–8A aircraft*
AV–8B aircraft
YAV–8B aircraft
GS attack aircraft
. fighter aircraft
. . **Harrier aircraft**
Hawker Siddeley aircraft
. **Harrier aircraft**
RT ∞ aircraft
Buccaneer aircraft
∞ military aircraft
P–1127 aircraft
Saab 37 aircraft
Vampire MK 35 aircraft
Vulcan aircraft

Hartmann flow
GS fluid flow
. laminar flow
. . **Hartmann flow**
. steady flow
. . **Hartmann flow**
RT Couette flow
magnetohydrodynamic flow
magnetohydrodynamics
two dimensional flow

Hartmann number
GS dimensionless numbers
. **Hartmann number**
ratios
. **Hartmann number**
RT magnetohydrodynamics
viscous drag

Hartree approximation
UF *Hartree–Appleton approximation*
Hartree–Fock approximation
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Hartree approximation**
RT atomic structure
many body problem
perturbation theory
self consistent fields
wave functions

Hartree–Appleton approximation
USE **Hartree approximation**

Hartree–Fock approximation
USE **Hartree approximation**

Hartree–Fock–Slater method
DEF A refined approximation method for the calculation from wave function of electron total energies, kinetic energies, etc., for chemical elements.
RT atomic physics
electron energy
∞ methodology
Slater orbitals

Harvard Radio Meteor Project
GS programs
. projects
. . **Harvard Radio Meteor Project**
RT radio echoes

Hastelloy (trademark)
GS alloys
. nickel alloys
. . **Hastelloy (trademark)**
RT iron alloys
molybdenum alloys

hatches
RT air locks
doors
egress
gates (openings)
ingress (spacecraft passageway)

hauling
RT cargo
delivery
materials handling
packaging
transportation
transportation energy
trucks

Hawaii
GS landforms
. islands
. . **Hawaii**
nations
. United States
. . **Hawaii**

Hawk missile
GS missiles
. surface to air missiles
. . **Hawk missile**
RT solid propellant rocket engines

Hawker Hunter aircraft
USE **F–2 aircraft**

Hawker P–1127 aircraft
USE **P–1127 aircraft**

Hawker P–1154 aircraft
USE **P–1154 aircraft**

Hawker Siddeley aircraft
GS **Hawker Siddeley aircraft**
. Argosy MK–1 aircraft
. AVRO 707 aircraft
. Buccaneer aircraft
. Comet 4 aircraft
. DH 112 aircraft
. DH 115 aircraft
. DH 121 aircraft
. DH 125 aircraft
. F–2 aircraft
. GA–5 aircraft
. Harrier aircraft
. HS–748 aircraft
. HS–801 aircraft
. P–1127 aircraft
. P–1154 aircraft
. Shackleton bomber
. Vampire MK 35 aircraft
. Vulcan aircraft
RT ∞ aircraft

Hawkeye 1 satellite
USE **Explorer 52 satellite**

Hawkeye aircraft
USE **E–2 aircraft**

Hawkeye satellites
GS artificial satellites
. scientific satellites
. . **Hawkeye satellites**

hay
GS farm crops
. **hay**
plants (botany)
. grasses
. . **hay**
RT agriculture
botany
Earth resources
farmlands
∞ food
grasslands
leguminous plants

Haynes Stellite
USE **Stellite (trademark)**

HAZ (metallurgy)
USE **heat affected zone**

hazardous material disposal (in space)
DEF The disposal in space of hazardous material. When radioactive materials are involved, the expected lifetime of orbit exceeds the lifetime of the radioactivity.
GS disposal
. waste disposal
. . **hazardous material disposal (in space)**
management
. waste management
. . waste disposal
. . . **hazardous material disposal (in space)**
RT aerospace environments
public health
radioactive wastes
toxicity and safety hazard

hazardous materials
(added March 1997)
GS **hazardous materials**
. hazardous wastes
RT carcinogens
contaminants
explosives
hazards
∞ materials
poisons
radiation hazards

toxic hazards
toxins and antitoxins
waste disposal

hazardous wastes
(added March 1997)
GS hazardous materials
. **hazardous wastes**
wastes
. **hazardous wastes**
RT contaminants
hazards
radiation hazards
toxic hazards
waste disposal

hazards
UF *danger*
noise hazards
GS **hazards**
. aircraft hazards
. flight hazards
. . meteoroid hazards
. operational hazards
. radiation hazards
. toxic hazards
RT accident prevention
accidents
aircraft spin
avoidance
crash injuries
∞ detectors
explosions
fires
flammable gases
hazardous materials
hazardous wastes
incompatibility
injuries
low visibility
noise tolerance
occupational diseases
protection
risk
sabotage
safety
safety devices
safety factors
safety management
spacecraft breakup
spontaneous combustion
toxicology
warning systems

haze
DEF Fine particles of dust, salt, or water dispersed through a part of the atmosphere, diminishing transparency of the air, causing colors to assume a characteristic subdued opalescent appearance, and reducing the horizontal visibility to more than one, but less than two kilometers. The obscuration, or lack of transparency, of the atmosphere near the Earth's surface, is often caused by haze or by heat refraction (shimmering).
RT air pollution
atmospheric optics
clarity
fog
halos
light transmission
low visibility
mist
opacity
optical properties
transparence
turbidity
visibility

haze detection
GS detection
. **haze detection**
RT fog
forest fire detection
fumes
gas detectors
mist
remote sensors
smoke
vapors

HBNO
USE **nitroguanidine**

HBWR reactor
USE **Halden Boiling Water Reactor**

HC–1 helicopter
USE **CH–47 helicopter**

HC–3 helicopter
UF *Omnipol HC–3 helicopter*
GS **general aviation aircraft**
. **HC–3 helicopter**
transport aircraft
. **HC–3 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **HC–3 helicopter**
RT passenger aircraft

HCL argon lasers
DEF Gas lasers in which the active material is gaseous hydrogen chloride and argon.
GS stimulated emission devices
. lasers
. . chemical lasers
. . . HCL lasers
. . . . **HCL argon lasers**
. . gas lasers
. . . HCL lasers
. . . . **HCL argon lasers**

HCL lasers
DEF Gas lasers in which the active material is gaseous hydrogen chloride. Used for hydrogen chloride lasers.
UF *hydrogen chloride lasers*
GS stimulated emission devices
. lasers
. . chemical lasers
. . . **HCL lasers**
. . . . HCL argon lasers
. . gas lasers
. . . **HCL lasers**
. . . . HCL argon lasers

HCMM
USE **Heat Capacity Mapping Mission**

HCN lasers
UF *hydrogen cyanide lasers*
GS stimulated emission devices
. lasers
. . gas lasers
. . . **HCN lasers**
RT chemical lasers
coherent light
hydrocyanic acid
light amplifiers
light sources
optical pumping
stimulated emission

HD–1 ground effect machines
USE **hovercraft ground effect machines**

HDL (computers)
USE **hardware description languages**

HDTV
USE **high definition television**

head (anatomy)
GS anatomy
. **head (anatomy)**
. . skull
. . . cranium
. . . . intracranial cavity
. . . mastoids
RT brain
chin
eye (anatomy)
face (anatomy)
forehead
lips (anatomy)
nose (anatomy)
sense organs

head (fluid mechanics)
GS fluid flow
. **head (fluid mechanics)**
. . head flow
. . pressure heads
RT elevation
geopotential height
hydrostatic pressure
hydrostatics
liquid flow
pressure
scale height

head (pressure)
USE **pressure heads**

head down tilt
RT aerospace medicine
bed rest
bioastronautics
body sway test
hemodynamic responses
hypokinesia
orthostatic tolerance
physiological effects
vestibular tests
weightlessness simulation

head flow
GS fluid flow
. head (fluid mechanics)
. . **head flow**
RT base flow
Blasius flow
inlet flow
liquid flow
∞ pressure drop

head movement
RT acceleration stresses (physiology)
aerospace medicine
eye movements
∞ motion
motion sickness
vestibular tests

head-up displays
GS display devices
. **head-up displays**
RT avionics
consoles
flight instruments
image tubes
indicating instruments

landing aids
navigation aids
position indicators
spacecraft position indicators
warning systems

headache
UF *cephalagia*
GS diseases
. **headache**
signs and symptoms
. **headache**

∞ **headers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT beams (supports)
chassis
hermetic seals
pipes (tubes)
supports
∞ terminals

headsets
USE **earphones**

healing
GS **healing**
. wound healing
RT clinical medicine
cures
therapy

health
GS **health**
. health physics
. . public health
. mental health
RT chronic conditions
clinical medicine
hygiene
oral hygiene
psychotherapy
sanitation

health physics
GS biophysics
. **health physics**
. . public health
health
. **health physics**
. . public health
RT fluence
industrial safety
nuclear medicine
nuclear physics
nuclear radiation
occupational diseases
∞ physics
radiation detectors
radiation dosage
radiation effects
radiation hazards
radiation injuries
radiation measuring instruments
radiation protection
radiation sickness
radiobiology
safety factors
∞ science

Health Physics Research Reactor
UF *HPRR*
GS nuclear reactors
. nuclear research and test reactors
. . **Health Physics Research Reactor**
RT ∞ physics

Health–Education Telecommunications exp
USE **HET experiment**

HEAO
UF *High Energy Astronomy Observatories*
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **HEAO**
. . . . HEAO 1
. . . . HEAO 2
. . . . HEAO 3
. . . . HEAO 4
observatories
. astronomical observatories
. . astronomical satellites
. . . **HEAO**
. . . . HEAO 1
. . . . HEAO 2
. . . . HEAO 3
. . . . HEAO 4
RT OAO

HEAO 1
DEF The first of three NASA High Energy Astronomy Observatories launched during 1977 for the study of cosmic rays and Earth's magnetic field to study the x ray and gamma ray sky. Used for HEAO A, High Energy Astronomy Observatory A, and High Energy Astronomy Observatory 1.
UF *HEAO A*
High Energy Astronomy Observatory 1
High Energy Astronomy Observatory A
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . HEAO
. . . . **HEAO 1**
observatories
. astronomical observatories
. . astronomical satellites
. . . HEAO
. . . . **HEAO 1**
unmanned spacecraft
. **HEAO 1**
RT OAO

HEAO 2
DEF The second of three NASA High Energy Astronomy Observatories. It was launched during 1978 for the study of specific x ray objects, quasars, x ray pulsars, and candidate black holes. Used for Einstein Observatory, HEAO B, High Energy Astronomy Observatory B, and High Energy Astronomy Observatory 2.
UF *Einstein Observatory*
HEAO B
High Energy Astronomy Observatory 2
High Energy Astronomy Observatory B
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . HEAO
. . . . **HEAO 2**
observatories
. astronomical observatories
. . astronomical satellites
. . . HEAO
. . . . **HEAO 2**
unmanned spacecraft
. **HEAO 2**
RT OAO

HEAO 3
DEF The third of four NASA High Energy Astronomy Observatories. It was launched during 1979 for the study of cosmic rays and elemental and isotropic composition as a corollary to a search of narrow gamma ray lines. Used for HEAO C, High Energy Astronomy Observatory C, and High Energy Astronomy Observatory 3.
UF *HEAO C*
High Energy Astronomy Observatory 3
High Energy Astronomy Observatory C
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . HEAO
. . . . **HEAO 3**
observatories
. astronomical observatories
. . astronomical satellites
. . . HEAO
. . . . **HEAO 3**
unmanned spacecraft
. **HEAO 3**
RT OAO

HEAO 4
(added May 1997)
UF *HEAO D*
High Energy Astronomy Observatory 4
High Energy Astronomy Observatory D
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . HEAO
. . . . **HEAO 4**
observatories
. astronomical observatories
. . astronomical satellites
. . . HEAO
. . . . **HEAO 4**
RT gamma ray astronomy
x ray astronomy

HEAO A
USE **HEAO 1**

HEAO B
USE **HEAO 2**

HEAO C
USE **HEAO 3**

HEAO D
USE **HEAO 4**

hearing
GS **hearing**
. binaural hearing
RT **audiology**
audiometry
auditory fatigue
auditory tasks
ear
loudness
stereophonics
thresholds (perception)

hearing loss
USE **auditory defects**

heart
GS anatomy
. circulatory system
. . cardiovascular system
. . . **heart**
. . . . cardiac auricles
. . . . cardiac ventricles
. . . . epicardium
. . . . myocardium
RT aorta
artificial cardiac pacemaker
artificial heart valves
blood

blood pumps
cardiograms
cardiography
cardiology
cardiotachometers
coronary circulation
diastole
muscles
phonocardiography

heart diseases
GS diseases
. **heart diseases**
. . angina pectoris
. . coronary artery disease
. . infarction
. . . myocardial infarction
RT bradycardia
cardiography
cardiology
cardiovascular system
echocardiography
electrocardiography
fat embolisms
fibrillation
His bundle
phonocardiography

heart function
GS **heart function**
. diastole
. fibrillation
. systole
RT angina pectoris
blood circulation
blood pressure
cardiac output
cardiography
carotid sinus reflex
cyanosis
echocardiography
heart minute volume
heart rate
hemodynamics
His bundle
physiology
stroke volume

heart implantation
GS implantation
. **heart implantation**
RT artificial heart valves
biotechnology
blood circulation
pulmonary circulation
surgery
transplantation

heart minute volume
GS output
. cardiac output
. . **heart minute volume**
RT heart function
spirometers

heart rate
UF *pulse (cardiovascular)*
GS rates (per time)
. **heart rate**
. . arrhythmia
. . bradycardia
. . tachycardia
RT angina pectoris
biofeedback
biomedical data
cardiac output
cardiology
diastole
epinephrine
heart function
Hering–Breuer reflex
sphygmography
stroke volume
systole

heart valves
GS valves
. **heart valves**
. . artificial heart valves
RT coronary circulation

hearths
RT furnaces
refractories

heat
DEF Energy transferred by a thermal process.
GS **heat**
. dry heat
. enthalpy
. . Gibbs free energy
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. heat of combustion
. nuclear heat
. process heat
. specific heat
RT activation energy
∞ energy
entropy
heating
heating equipment
infrared radiation
temperature
thermal energy
thermal insulation
thermal radiation
thermochemistry
thermodynamic properties
thermodynamics
work

heat acclimatization
GS adaptation
. acclimatization
. . **heat acclimatization**
RT body temperature
cold acclimatization
high temperature environments
human tolerances
perspiration
physiological effects

heat affected zone
DEF That portion of the base metal, the structure or properties of which have been altered by the heat of welding or gas-cutting operation. Used for HAZ (metallurgy).
UF *HAZ (metallurgy)*
PT arc welding
gas tungsten arc welding
heat treatment
metal bonding
∞ metallurgy
metal–metal bonding
soldering
temperature dependence
temperature effects
thermomechanical treatment
weldability
welding

heat balance
DEF The equilibrium which exists on the average between the radiation received by a planet and its atmosphere from the sun and that emitted by the planet and the atmosphere. The equilibrium which is known to exist when all sources of heat gain and loss for a given region of body are accounted for. In general, this balance includes advective or evaporative terms as well as a radiation term.
GS balance
. **heat balance**
RT atmospheric heat budget
boilers
combustion
material balance
pyrometallurgy
thermochemical properties
thermochemistry
thermodynamic properties

heat budget
DEF The accounting for the total amount of heat received and lost by a particular system.
GS energy budgets
. **heat budget**
. . atmospheric heat budget
RT ∞ budgets
Earth radiation budget
specific heat

heat capacity
USE **specific heat**

Heat Capacity Mapping Mission
UF *HCMM*
RT Applications Explorer Satellites
geography
mapping
∞ missions
planetary mapping
thermal mapping

heat conduction
USE **conductive heat transfer**

heat content
USE **enthalpy**

heat dissipation
USE **cooling**

heat dissipation chilling
USE **cooling**

heat effects
USE **temperature effects**

heat engines
(added September 1992)
RT ceramics
energy technology
engines
thermodynamic cycles

heat equations
USE **thermodynamics**

heat exchangers
DEF Devices for transferring heat from one fluid to another without intermixing the fluids, as a regenerator and, an apparatus for cooling or heating the air in a wind tunnel.
GS **heat exchangers**
. tube heat exchangers
RT condensers (liquefiers)
coolants
cooling
cooling fins
cooling systems

counterflow
evaporators
∞ exchangers
finned bodies
gas cooling
geothermal energy extraction
heating
heating equipment
regenerative cooling
regenerators
SNAP
SNAP 1
SNAP 2
SNAP 8
SNAP 10A
space cooling (buildings)
space power reactors
space power unit reactors
waste heat
water heating

heat flow
USE **heat transmission**

heat flux
SN (LIMITED TO HEAT ENERGY TRANSMISSION RATE)
DEF The thermal intensity indicated by the amount of energy transmitted per unit area
GS rates (per time)
. flux (rate)
. . **heat flux**
RT flux density
solar flux

heat gain
USE **heating**

heat generation
SN (EXCLUDES BIOLOGICAL PRODUCTION OF HEAT)
RT cogeneration
combustion
direct power generators
∞ generation
heating
heating equipment
process heat
solid propellant combustion

heat islands
RT cities
climatology
urban planning
weather modification

heat measurement
UF *calorimetry*
RT bolometers
bomb calorimeters
calorimeters
drop calorimeters
enthalpy
flame calorimeters
∞ measurement
shell anodes

heat of combustion
UF *combustion heat*
GS chemical properties
. thermochemical properties
. . **heat of combustion**
heat
. **heat of combustion**
thermodynamic properties
. thermochemical properties
. . **heat of combustion**
RT combustion products
guns (ordnance)

heat of dissociation
GS chemical properties
. thermochemical properties
. . **heat of dissociation**
heat
. enthalpy
. . **heat of dissociation**
thermodynamic properties
. enthalpy
. . **heat of dissociation**
. thermochemical properties
. . **heat of dissociation**
RT chemical equilibrium
dissociation
∞ equilibrium
reaction kinetics
thermal dissociation
thermochemistry
thermodynamic equilibrium

heat of formation
UF *formation heat*
GS chemical properties
. thermochemical properties
. . **heat of formation**
heat
. enthalpy
. . **heat of formation**
thermodynamic properties
. enthalpy
. . **heat of formation**
. thermochemical properties
. . **heat of formation**

heat of fusion
DEF The increase in enthalpy accompanying the conversion of one mole, or a unit mass, of a solid to a liquid at its melting point at constant pressure and temperature. Used for latent heat of fusion.
UF *fusion heat*
latent heat of fusion
GS chemical properties
. thermochemical properties
. . latent heat
. . . **heat of fusion**
heat
. enthalpy
. . latent heat
. . . **heat of fusion**
thermodynamic properties
. enthalpy
. . latent heat
. . . **heat of fusion**
. thermochemical properties
. . latent heat
. . . **heat of fusion**
. thermophysical properties
. . latent heat
. . . **heat of fusion**
RT fusion (melting)
melting
phase change materials
phase diagrams
phase transformations
specific heat
thermal energy
thermochemistry
thermodynamics
transition temperature

heat of solution
GS chemical properties
. thermochemical properties
. . **heat of solution**
heat
. enthalpy
. . **heat of solution**
thermodynamic properties
. enthalpy
. . **heat of solution**
. thermochemical properties
. . **heat of solution**
. thermophysical properties
. . **heat of solution**
RT molecular energy levels
thermal energy
thermochemistry
thermodynamics

heat of vaporization
UF *vaporization heat*
GS chemical properties
. thermochemical properties
. . latent heat
. . . **heat of vaporization**
heat
. enthalpy
. . latent heat
. . . **heat of vaporization**
thermodynamic properties
. enthalpy
. . latent heat
. . . **heat of vaporization**
. thermochemical properties
. . latent heat
. . . **heat of vaporization**
. thermophysical properties
. . latent heat
. . . **heat of vaporization**
RT vaporizing

heat pipes
SN (EXCLUDES PIPES AND TUBES USED FOR THE TRANSMISSION OF HEATED LIQUIDS OR GASES)
RT geothermal energy utilization
spacecraft temperature

heat pumps
RT air conditioning
air conditioning equipment
condensers (liquefiers)
cooling systems
geothermal energy extraction
heating equipment
pumps
refrigerating machinery
residential energy
space cooling (buildings)
thermoelectric cooling
waste heat

heat radiators
UF *condenser radiators*
heat rejection devices
GS **heat radiators**
. spacecraft radiators
RT black body radiation
cooling
cooling fins
cooling systems
heating equipment
∞ insulated structures
radiative heat transfer
∞ radiators
Stefan–Boltzmann law

heat regulation
USE **temperature control**

heat rejection devices
USE **heat radiators**

heat resistance
USE **thermal resistance**

heat resistant alloys
DEF Alloys developed for very high temperature service where relatively high stresses (tensile, thermal, vibratory, and shock) are encountered and where oxidation resistance is frequently required. Used for high temperature alloys and superalloys.
UF *high temperature alloys*
superalloys
GS alloys
. **heat resistant alloys**
. . nimonic alloys
. . refractory metal alloys
. . . molybdenum alloys
. . . . Rene 41
. . . . Rene 63
. . . . Rene 77
. . . . Rene 95
. . . niobium alloys
. . . osmium alloys
. . . rhenium alloys
. . . tantalum alloys
. . . tungsten alloys
. . Udimet alloys
. . Waspaloy
RT aluminides
carmets
chromium alloys
cobalt alloys
dispersion strengthening
hafnium alloys
nickel alloys
oxide dispersion strengthening
refractory metals
sulfidation
superplasticity

heat shielding
DEF The use of devices that protect something from heat. Specifically, the protective structure necessary to protect a reentry body from aerodynamic heating. Used for thermal shielding.
UF *thermal shielding*
GS shielding
. **heat shielding**
. . reentry shielding
. . reusable heat shielding
RT ablation
ablative materials
ablative nose cones
cooling
infrared suppression
∞ insulated structures
Ludox (trademark)
pyrolytic graphite
solar reflectors
spacecraft shielding
temperature
temperature control
thermal control coatings
thermal insulation
thermal protection

heat sinks
UF *thermal sinks*
GS sinks
. **heat sinks**
RT ablative materials
absorbers (materials)
cooling systems
endothermic reactions
energy absorption
reentry shielding
regenerators
thermal absorption
thermal insulation

heat sources
UF *hydraulic heating sources*
GS **heat sources**
. thermal resources
. . geothermal resources
. . . geysers
RT ∞ energy sources
energy storage
engines
geothermal technology
laser heating
light sources
∞ power supplies
radiation sources
thermodynamic efficiency

heat storage
UF *thermal energy storage*
GS energy storage
. **heat storage**
RT geothermal energy utilization
heat tapes
phase change materials
solar dynamic power systems
solar houses
temperature
Trombe walls

heat stroke
RT body temperature
heat tolerance
hot weather
hyperthermia
physiological effects
thermal comfort
thermal environments

heat tapes
RT heat storage
ice prevention
∞ tapes

heat tests
USE **high temperature tests**

heat tolerance
GS tolerances (physiology)
. **heat tolerance**
RT body temperature
cold tolerance
heat stroke
human tolerances

heat transfer
SN (TRANSMISSION ACROSS AN INTERFACE)
DEF The transfer or exchange of heat by radiation, conduction, or convection with a substance and between the substance and its surroundings. Used for nonadiabatic processes.
UF *nonadiabatic processes*
GS transmission
. heat transmission
. . **heat transfer**
. . . aerodynamic heat transfer
. . . . hypersonic heat transfer
. . . . supersonic heat transfer
. . . conductive heat transfer
. . . convective heat transfer
. . . laminar heat transfer
. . . radiative heat transfer
. . . turbulent heat transfer
RT advection
atmospheric heat budget
baths
Biot number
boiling
Boussinesq approximation
chemical engineering
compressibility effects
∞ conduction
cooling
counterflow
cryogenic cooling
diffuse radiation
dimensionless numbers
energy transfer
film boiling
film condensation
flat plates
fluid boundaries
forced convection
gas transport
gas–liquid interactions
gas–solid interfaces
geothermal energy conversion
geothermal technology
heating
hot surfaces
Leidenfrost phenomenon
Lewis numbers
liquid–liquid interfaces
liquid–solid interfaces
liquid–vapor interfaces
mass transfer
mechanical engineering
metal vapors
nonadiabatic conditions
nongray gas
nonisothermal processes
nucleate boiling
Nusselt number
Peclet number
phase change materials
Prandtl number
radiative transfer
Rayleigh equations
reusable heat shielding
stagnation point
Stanton number
temperature profiles
temperature ratio
thermal diffusion
thermal expansion
thermal insulation
thermal pollution
thermodynamics
thermomigration
transferring
transport properties
waste energy utilization

heat transfer coefficients
SN (HEAT FLUX PER UNIT AREA PER UNIT TEMPERATURE DIFFERENCE)
DEF The rate of heat transfer per unit area per unit temperature difference, a quantity having the dimensions of reciprocal length.
GS coefficients
. **heat transfer coefficients**
RT accommodation coefficient
evaporation rate
heating
mass flow factors
nucleate boiling

heat transmission
DEF Heat transmitted from one substance to another. Used for heat flow.
UF *heat flow*
GS transmission
. **heat transmission**
. . heat transfer
. . . aerodynamic heat transfer
. . . . hypersonic heat transfer
. . . . supersonic heat transfer

. . . conductive heat transfer
. . . convective heat transfer
. . . laminar heat transfer
. . . radiative heat transfer
. . . turbulent heat transfer
RT adiabatic equations
annular flow
convection
convective flow
ducted flow
equilibrium flow
∞ flow
fluid flow
geophysics
geothermal energy conversion
geothermal energy extraction
geothermal resources
mass flow factors
nonequilibrium flow
potential flow
radial flow
radiative transfer
steady flow
thermal analysis
thermal insulation
thermohydraulics
uniform flow
unsteady flow
wall flow

heat treatment
DEF Heating and cooling a solid metal or alloy in such a way as to obtain desired conditions or properties.
GS **heat treatment**
. annealing
. . laser annealing
. . pulse heating
. maraging
. nitriding
. normalizing (heat treatment)
. stress relieving
. tempering
RT aging (metallurgy)
alloys
baking
critical temperature
ferritic stainless steels
forging
furnaces
graphitization
hardeners
hardening (materials)
heat affected zone
heating
martensite
∞ metallurgy
microstructure
nucleation
phase diagrams
precipitation hardening
quenching (cooling)
recrystallization
salt baths
∞ soaking
stabilization
supercooling
supersaturation
temper (metallurgy)
temperature distribution
thermochemistry
thermomechanical treatment
∞ treatment

∞ **heaters**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED CONSULT THE TERMS LISTED BELOW)
RT deicers
deicing
electron tubes
heating equipment
vaporizers
water heating

heating
UF *heat gain*
preheating
reheating
warming
GS **heating**
. arc heating
. atmospheric heating
. . global warming
. . stratospheric warming
. baking
. base heating
. gas heating
. induction heating
. ionospheric heating
. kinetic heating
. . aerodynamic heating
. . shock heating
. laser heating
. magnetohydrodynamic shear heating
. pasteurizing
. plasma heating
. . electron cyclotron heating
. radiant heating
. radio frequency heating
. resistance heating
. solar heating
. space heating (buildings)
. superheating
. transient heating
. . pulse heating
. . shock heating
. water heating
RT air conditioning
annealing
autoclaving
boiling
cementation
∞ conduction
convection
cooling
decarburization
defrosting
environmental engineering
geothermal energy extraction
geothermal energy utilization
heat
heat exchangers
heat generation
heat transfer
heat transfer coefficients
heat treatment
heating equipment
Hilsch tubes
hydrothermal systems
ice prevention
integrated energy systems
jackets
laser annealing
laser welding
melting
Modular Integrated Utility System
∞ radiation
roasting
sintering
∞ soaking
temperature
temperature control
temperature distribution
thermal cycling tests
thermal shock
thermal stresses
vaporizing
waste energy utilization

heating equipment
UF *Gerdien arc heaters*
preheaters
GS **heating equipment**
. boilers
. furnaces
. . electric furnaces
. . image furnaces
. . solar furnaces
. . vacuum furnaces
. ovens
. vaporizers
. . evaporators
RT air conditioning
air conditioning equipment
crucibles
deicers
deicing
∞ electric equipment
∞ equipment
fuel tanks
heat
heat exchangers
heat generation
heat pumps
heat radiators
∞ heaters
heating
onboard equipment
space heating (buildings)
temperature control
thermal insulation
water heating

heaving
RT bending
∞ bows
buckling
displacement
distortion
flexing
∞ motion
pitch (inclination)
warpage

heavy cosmic ray primaries
USE **heavy nuclei**
primary cosmic rays

heavy elements
GS chemical elements
. heavy elements
RT ∞ elements
heavy ions

heavy ion collisions
USE **ionic collisions**

heavy ions
GS ions
. heavy ions
RT heavy elements
ion stripping
isotope separation
isotopes
light ions

heavy lift airships
DEF Airships designed to lift heavy materials.
GS airships
. **heavy lift airships**
RT materials handling
rotors

heavy lift helicopters
GS V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **heavy lift helicopters**
. . . . CH-62 helicopter
RT air cargo
∞ aircraft
cargo aircraft
helicopter design

heavy lift launch vehicles
UF *HLLV*
GS launch vehicles
. **heavy lift launch vehicles**
. . Energiya launch vehicle
. . Proton launch vehicle
RT Advanced Launch System (STS)
rocket engines
∞ rockets
spacecraft launching
∞ vehicles

heavy nuclei
UF *heavy cosmic ray primaries*
GS particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **heavy nuclei**
. corpuscular radiation
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **heavy nuclei**
RT primary cosmic rays

heavy water
DEF Water in which the hydrogen of the water molecule consists entirely of the heavy hydrogen isotope of mass 2 (deuterium). Used for deuterium oxides and hydrogen deuterium oxide.
UF *deuterium oxides*
hydrogen deuterium oxide
GS chalcogenides
. oxides
. . **heavy water**
hydrogen compounds
. deuterium compounds
. . **heavy water**
water
. **heavy water**
RT deuterium
moderators
tritium

heavy water components test reactors
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . heavy water reactors
. . . . **heavy water components test reactors**
. nuclear research and test reactors
. . **heavy water components test reactors**
. water moderated reactors
. . **heavy water components test reactors**

heavy water reactors
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . **heavy water reactors**
. . . . heavy water components test reactors
. . . . plutonium recycle test reactor
. . . . zero power reactor 2
RT light water breeder reactors

HEF (high energy fuels)
USE **high energy fuels**

height
DEF Vertical distance; the distance above some reference point or plane, as, height above sea level. The vertical dimension of anything; the distance which something extends above its foot or root, as blade height.
GS dimensions
. **height**
. . scale height
RT altitude
depth
distance
geopotential
∞ level
slopes

Heinkel aircraft
RT ∞ aircraft

Heisenberg theory
GS atomic theory
. **Heisenberg theory**
RT atomic excitations
Dyson theory
energy transfer
∞ theories

Helene
(added January 1996)
DEF A natural satellite of Saturn orbiting at a mean distance of 377,400 kilometers.
GS celestial bodies
. natural satellites
. . Saturn satellites
. . . **Helene**
RT Saturn (planet)

helical antennas
DEF Antennas used where circular polarization is required. The driven element consists of a helix supported above a ground plane.
GS antennas
. directional antennas
. . **helical antennas**
RT antenna design
∞ helices
microwave antennas

helical flow
GS fluid flow
. **helical flow**
RT axisymmetric flow
flow geometry
∞ helices
magnetohydrodynamic stability
three dimensional flow

helical inducers
GS intake systems
. **helical inducers**
RT field coils
∞ helices
plasma control

helical windings
GS winding
. **helical windings**
RT ∞ **helices**
magnetic field configurations
plasma control
stellarators

∞ **helices**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT curves (geometry)
helical antennas
helical flow
helical inducers
helical windings
∞ spirals

helicopter attitude indicators
USE **attitude indicators**

helicopter control
GS aircraft control
. **helicopter control**
RT airborne radar approach
attitude control
automatic control
∞ control
controllability
directional control
flight control
harmonic control
helicopters
lateral control
longitudinal control
manual control
speed control
tail rotors

helicopter design
GS aircraft design
. **helicopter design**
RT compound helicopters
computer aided design
∞ design
engine design
heavy lift helicopters
helicopters
product development
rotor body interactions
streamlining
structural design
UH-60A helicopter
UH-61A helicopter
whirl towers

helicopter engines
GS engines
. aircraft engines
. . **helicopter engines**
. internal combustion engines
. . **helicopter engines**
RT convertible fan-shaft engines
helicopters
jet engines
T-53 engine
T-55 engine
T-58 engine
T-63 engine
T-64 engine
T-74 engine
T-76 engine

helicopter impulsive noise
USE **blade slap noise**

helicopter performance
GS aircraft performance
. **helicopter performance**
RT aerodynamic stability

aircraft reliability
controllability
flight characteristics
flight envelopes
helicopters
maneuverability

helicopter propeller drive
GS mechanical drives
. propeller drive
. . **helicopter propeller drive**
RT helicopters
jet propulsion
rotary wings
tilted propellers
variable pitch propellers

helicopter rotors
USE **rotary wings**

helicopter tail rotors
GS rotating bodies
. rotors
. . tail rotors
. . . **helicopter tail rotors**
RT helicopters
rotary wings
∞ rotor blades

helicopter wakes
GS wakes
. aircraft wakes
. . **helicopter wakes**
RT downwash
helicopters

helicopters
DEF Rotorcraft that, for its horizontal motion, depends principally on its engine-driven rotors.
UF *drone helicopters*
gyroplanes
GS V/STOL aircraft
. rotary wing aircraft
. . **helicopters**
. . . Alouette helicopters
. . . . SA-330 helicopter
. . . . SE-3160 helicopter
. . . Bell 214A helicopter
. . . compound helicopters
. . . . S-67 helicopter
. . . H-17 helicopter
. . . heavy lift helicopters
. . . . CH-62 helicopter
. . . light helicopters
. . . . OH-4 helicopter
. . . . OH-5 helicopter
. . . . OH-6 helicopter
. . . . OH-58 helicopter
. . . military helicopters
. . . . AH-1G helicopter
. . . . AH-1S helicopter
. . . . AH-1W helicopter
. . . . AH-63 helicopter
. . . . AH-64 helicopter
. . . . BO-105 helicopter
. . . . CH-3 helicopter
. . . . CH-21 helicopter
. . . . CH-34 helicopter
. . . . CH-46 helicopter
. . . . CH-47 helicopter
. . . . CH-54 helicopter
. . . . CH-62 helicopter
. . . . H-19 helicopter
. . . . H-43 helicopter
. . . . H-53 helicopter
. . . . H-54 helicopter
. . . . H-56 helicopter
. . . . H-60 Helicopter
. . . . HC-3 helicopter
. . . . HH-43 helicopter
. . . . HH-65 helicopter
. . . . OH-4 helicopter
. . . . OH-5 helicopter
. . . . OH-6 helicopter
. . . . OH-13 helicopter
. . . . OH-23 helicopter
. . . . OH-58 helicopter
. . . . P-531 helicopter
. . . . QH-50 helicopter
. . . . S-67 helicopter
. . . . SA-321 helicopter
. . . . SA-330 helicopter
. . . . SH-3 helicopter
. . . . SH-4 helicopter
. . . . Sikorsky Whirlwind helicopter
. . . . UH-1 helicopter
. . . . UH-2 helicopter
. . . . UH-34 helicopter
. . . . UH-60A helicopter
. . . . UH-61A helicopter
. . . . Westland Whirlwind helicopter
. . . . XV-9A aircraft
. . . rigid rotor helicopters
. . . . CH-3 helicopter
. . . . F-28 helicopter
. . . . XH-51 helicopter
. . . S-58 helicopter
. . . S-61 helicopter
. . . tandem rotor helicopters
. . . . CH-46 helicopter
. . . . CH-47 helicopter
. . . . H-25 helicopter
. . . EH-101 helicopter
. . . TH-55 helicopter
RT airborne radar approach
∞ aircraft
aircraft survivability
blade slap noise
blade-vortex interaction
general aviation aircraft
ground resonance
helicopter control
helicopter design
helicopter engines
helicopter performance
helicopter propeller drive
helicopter tail rotors
helicopter wakes
heliports
∞ military aircraft
nap-of-the-earth navigation
recovery vehicles
rotor systems research aircraft
short takeoff aircraft
∞ subsonic aircraft
tilt rotor aircraft
Tilt Rotor Research Aircraft Program
utility aircraft
V-22 aircraft
vertical takeoff aircraft
Weser aircraft
Westland aircraft
XV-15 aircraft

Helliner (helicopter)
USE **EH-101 helicopter**

Hello aircraft
UF *Helo military aircraft*
GS **Hello aircraft**
. U-10 aircraft
RT ∞ aircraft

Helo military aircraft
USE **Hello aircraft**

heliocentric orbits
USE **solar orbits**

heliographs
USE **spectroheliographs**

heliography
USE **spectroheliographs**

heliomagnetism
USE **solar magnetic field**

heliometers
UF *heliometry*
GS measuring instruments
. **heliometers**
. . pyroheliometers
optical equipment
. **heliometers**
. . pyroheliometers
telescopes
. **heliometers**
. . pyroheliometers

heliometry
USE **heliometers**
pyroheliometers

Helios 1
GS artificial satellites
. Helios satellites
. . **Helios 1**
unmanned spacecraft
. space probes
. . solar probes
. . . **Helios 1**

Helios 2
GS artificial satellites
. Helios satellites
. . **Helios 2**
unmanned spacecraft
. space probes
. . solar probes
. . . **Helios 2**

Helios A
GS artificial satellites
. Helios satellites
. . **Helios A**
unmanned spacecraft
. space probes
. . solar probes
. . . **Helios A**

Helios B
GS artificial satellites
. Helios satellites
. . **Helios B**
unmanned spacecraft
. space probes
. . solar probes
. . . **Helios B**

Helios Project
GS programs
. NASA programs
. . NASA space programs
. . . **Helios Project**
. projects
. . **Helios Project**
. space programs
. . NASA space programs
. . . **Helios Project**
RT charged particles
high temperature plasmas

solar probes
zodiacal light

Helios satellites
GS artificial satellites
. **Helios satellites**
. . Helios 1
. . Helios 2
. . Helios A
. . Helios B
RT magnetic fields
particle flux density
solar flux density

helioseismology
UF *solar dynamics*
solar seismology
GS seismology
. **helioseismology**
RT astrophysics
∞ science
solar interior
solar physics

heliosphere
DEF The region around the sun whose **plasma** processes are dominated by solar wind.
RT cosmic rays
interplanetary space
interstellar gas
SOHO Mission
solar activity effects
solar wind

heliostats
DEF Instruments consisting of mirrors moved by clockwork for reflecting the sun's rays in a fixed direction.
RT ∞ instruments
mirrors
reflectors
servomotors
solar reflectors
synchronizers

heliotrons
(added September 1998)
GS nuclear reactors
. fusion reactors
. . **heliotrons**
RT plasma control
stellarators

heliports
DEF An area of land, water, or structure used, or intended to be used, for the landing and takoff of helicopters.
GS airports
. **heliports**
RT air traffic control
airport planning
airport towers
hangars
helicopters
landing aids
landing sites
military air facilities
navigation aids
solar compasses
V/STOL aircraft

helitrons
GS electron tubes
. vacuum tubes
. . microwave tubes
. . . traveling wave tubes
. . . . backward wave tubes
. . . . . **helitrons**
microwave equipment
. microwave tubes
. . traveling wave tubes
. . . backward wave tubes
. . . . **helitrons**
RT carcinotrons

hellum
GS chemical elements
. rare gases
. . **hellum**
. . . helium isotopes
. . . liquid helium
. . . . liquid helium 2
gases
. rare gases
. . **hellum**
. . . helium isotopes
. . . liquid helium
. . . . liquid helium 2
RT alpha particles
helium afterglow
helium atoms
helium film
helium ions
Wolf–Rayet stars

helium 2
USE **hellum isotopes**
liquid hellum

hellum 3
USE **hellum isotopes**

helium 4
USE **hellum isotopes**

hellum afterglow
GS afterglows
. **hellum afterglow**
RT gas ionization
helium
plasma decay

hellum atoms
GS atoms
. **hellum atoms**
RT helium

hellum compounds
RT ∞ rare gas compounds

hellum film
RT ∞ **films**
helium

hellum hydrogen atmospheres
GS **environments**
. **extraterrestrial environments**
. . **planetary environments**
. . . planetary atmospheres
. . . . **hellum hydrogen atmospheres**

hellum ions
GS ions
. **hellum ions**
RT alpha particles
helium

hellum isotopes
UF ***helium 2***
helium 3
helium 4
GS chemical elements
. nuclides
. . isotopes
. . . **hellum isotopes**
. rare gases
. . helium
. . . **hellum isotopes**
gases
. rare gases
. . helium
. . . **hellum isotopes**

helium plasma
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **helium plasma**
. corpuscular **radiation**
. . energetic particles
. . . plasmas (physics)
. . . . **helium plasma**
RT argon plasma
electron plasma
hydrogen plasma
oxygen plasma

helium stars
USE **B stars**

helium–neon lasers
GS stimulated emission devices
. lasers
. . gas lasers
. . . **helium–neon lasers**
RT laser modes
laser outputs

helium–oxygen atmospheres
GS controlled **atmospheres**
. **helium–oxygen atmospheres**
RT aerospace environments
∞ atmospheres
∞ breathing
gas mixtures
portable life support systems
underwater breathing apparatus

helix tubes
USE **traveling wave tubes**

Hellmann–Feynman theorem
GS theorems
. **Hellmann–Feynman theorem**

helmet mounted displays
UF *HMD (displays)*
GS display devices
. **helmet mounted displays**
RT crew workstations
∞ detectors
images
indicating instruments
∞ instruments
monitors
personnel

helmets
GS clothing
. protective clothing
. . **helmets**
safety devices
. **helmets**
RT armor
flight clothing
goggles
pressure suits

∞ **Helmholtz equations**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ equations
Helmholtz vorticity equation
Kelvin–Helmholtz instability
time dependance
wave equations

Helmholtz resonators
DEF An enclosure having a small opening consisting of a straight tube of such dimensions that the enclosure resonates at a single frequency determined by the geometry of the resonator.
GS resonators
. **Helmholtz resonators**
RT cavity resonators
noise reduction

Helmholtz vorticity equation
GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **Helmholtz vorticity equation**
. . . vorticity equations
. . . . **Helmholtz vorticity equation**
equations of motion
. kinetic equations
. . hydrodynamic equations
. . . **Helmholtz vorticity equation**
flow equations
. vorticity equations
. . **Helmholtz vorticity equation**
RT ∞ equations
∞ Helmholtz equations
vorticity

HELOS (satellite)
USE **Exoset satellite**

hematite
DEF A common iron mineral; ferric oxide.
GS chalcogenides
. oxides
. . metal oxides
. . . iron oxides
. . . . **hematite**
iron compounds
. iron oxides
. . **hematite**
minerals
. iron ores
. . **hematite**

hematocrit
RT blood
blood circulation
blood flow
blood plasma
blood volume
erythrocytes
hematology
hemoglobin

hematocrit ratio
GS ratios
. **hematocrit ratio**
RT anemias
erythrocytes
hematology

hematology
RT carboxyhemoglobin test
hematocrit
hematocrit ratio
reticulocytes

hematopoiesis
GS cytogenesis
. **hematopoiesis**
RT blood
blood cells
bone marrow
cardiovascular system
cells (biology)
physiological effects
radiation effects

hematopoietic system
RT blood cells
blood volume
bone marrow
cardiovascular system
physiological effects
∞ systems

hematuria
GS signs and symptoms
. **hematuria**
RT urine

hemisphere cylinder bodies
RT ∞ cylinders
cylindrical bodies
hemispherical shells
pressure vessels

∞ **hemispheres**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aerodynamic configurations
bodies of revolution
Eastern Hemisphere
hemispherical shells
Northern Hemisphere
Southern Hemisphere
spheres

hemispherical shells
GS shells (structural forms)
. **hemispherical shells**
RT bodies of revolution
circular shells
domes (structural forms)
hemisphere cylinder bodies
∞ hemispheres
metal shells
reinforced shells
spheres
spherical shells

hemocytes
GS cells (biology)
. blood cells
. . **hemocytes**
RT invertebrates

hemodynamic responses
GS physiological effects
. physiological responses
. . **hemodynamic responses**
responses
. physiological responses
. . **hemodynamic responses**
RT blood circulation
blood pressure
head down tilt

hemodynamics
GS **hemodynamics**
. lower body negative pressure
RT blood circulation
blood volume
cardiovascular system
∞ dynamics
heart function
hemoperfusion
physiology

hemoglobin
GS biopolymers
. proteins
. . **hemoglobin**
. . . carboxyhemoglobin
. . . oxyhemoglobin
organic compounds
. proteins
. . **hemoglobin**
. . . carboxyhemoglobin
. . . oxyhemoglobin
organometallic compounds
. **hemoglobin**
. . carboxyhemoglobin
. . oxyhemoglobin
RT anemias
blood
blood cells
cells (biology)
erythrocytes
hematocrit
hemolysis
polycythemia
porphines
porphyrins
reticulocytes

hemolysis
RT complement (biology)
erythrocytes
hemoglobin
polycythemia
reticulocytes

hemoperfusion
DEF Type of poison treatment in which the patient's blood is passed over a bed of absorbent material (activated carbon, resin, etc.) to remove the toxin from the bloodstream.
RT activated carbon
adsorbents
blood flow
blood pressure
hemodynamics
toxicology

hemorrhages
GS **hemorrhages**
. petechia
RT ∞ bleeding
blood
cardiovascular system
coagulation
hemostatics
hypotension
injuries
pathology
polycythemia
reticulocytes

hemostasis
USE **hemostatics**

hemostatics
UF *hemostasis*
GS drugs
. **hemostatics**
RT blood coagulation
fibrinogen
gibberellins
hemorrhages
thrombin
thromboplastin

HEMT (electronics)
USE **high electron mobility transistors**

Henry law
RT composition (property)
partial pressure
Raoult law
solubility
solutions
vapor pressure

HEOS A satellite
GS artificial satellites
. ESA satellites
. . HEOS satellites
. . . **HEOS A satellite**
ESA spacecraft
. ESA satellites
. . HEOS satellites
. . . **HEOS A satellite**

HEOS B satellite
GS artificial satellites
. ESA satellites
. . HEOS satellites
. . . **HEOS B satellite**
ESA spacecraft
. ESA satellites
. . HEOS satellites
. . . **HEOS B satellite**

HEOS satellites
UF *Highly Eccentric Orbit satellites*
GS artificial satellites
. ESA satellites
. . **HEOS satellites**
. . . HEOS A satellite
. . . HEOS B satellite
ESA spacecraft
. ESA satellites
. . **HEOS satellites**
. . . HEOS A satellite
. . . HEOS B satellite
RT European space programs
solar orbits

heparins
RT anticoagulants

hepatitis
DEF An inflammation of the liver, commonly of viral origin, but also associated with other diseases.
GS diseases
. infectious diseases
. . **hepatitis**
RT acquired immunodeficiency syndrome
anatomy
liver
viral diseases

heptadiene
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . dienes
. . . . **heptadiene**

heptanes
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . **heptanes**
RT hydrocarbon fuels

herbicides
DEF Chemical agents used for the eradication of undesirable plants or for the inhibition of their growth.
RT brush (botany)
defoliants
foliage
forests
leaves
plants (botany)
toxicity
trees (plants)

Herbig–Haro objects
DEF Celestial objects having many of the characteristics of a T Tauri star (e.g., their spectra show a weak continuum with strong emission lines), believed to be stars in the very early stages of development. All known Herbig–Haro objects have been found within the boundaries of dark clouds. These strong infrared sources are characterized by mass loss.
GS celestial bodies
. nebulae
. . **Herbig–Haro objects**
RT B stars
∞ bodies
infrared sources (astronomy)
infrared stars
stellar radiation
stellar spectra
T Tauri stars

Hercules aircraft
USE **C-130 aircraft**

Hercules engine
GS engines
. rocket engines
. . solid propellant rocket engines
. . . **Hercules engine**
RT Honest John rocket vehicle
Little John rocket vehicle

Hercules nova
GS celestial bodies
. stars
. . variable stars
. . . novae
. . . . **Hercules nova**
RT dwarf novae

heredity
RT breeding (reproduction)
congenital anomalies
cytogenesis
evolution (development)

Hering–Breuer reflex
GS reflexes
. respiratory reflexes
. . **Hering–Breuer reflex**
RT heart rate

Hermes manned spaceplane
GS manned spacecraft
. space shuttles
. . **Hermes manned spaceplane**
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . space shuttles
. . . . **Hermes manned spaceplane**
RT French space program
space transportation system
spacecraft design

Hermes satellite
USE **Communications Technology Satellite**

hermetic seals
GS seals (stoppers)
. **hermetic seals**
RT ∞ headers
labyrinth seals
O ring seals
pump seals

Hermitian polynomial
GS algebra
. polynomials
. . **Hermitian polynomial**
RT Jacobi matrix method
matrices (mathematics)
real variables
vector spaces

HERO Reactor
GS nuclear reactors
. nuclear research and test reactors
. . **HERO Reactor**

Hertzsprung–Russell diagram
UF *HR diagram*
GS diagrams
. **Hertzsprung–Russell diagram**
RT asymptotic giant branch stars
color–color diagram
color–magnitude diagram
horizontal branch stars
stellar evolution
stellar luminosity
stellar spectra

Herzberg bands
GS spectra
. radiation spectra
. . absorption spectra
. . . **Herzberg bands**
. spectral bands
. . absorption spectra
. . . **Herzberg bands**
RT ∞ bands
oxygen spectra
Schumann–Runge bands
ultraviolet spectra

Herzegovina
USE **Bosnia and Herzegovina**

Hessian matrices
DEF Given a real value function of N variables, an N by N symmetric of all second order partial derivatives.
GS algebra
. vector spaces
. . matrices (mathematics)
. . . **Hessian matrices**
RT algorithms
optimization

HET experiment
UF *Health–Education Telecommunications exp*
GS telecommunication
. **HET experiment**
teleconferencing
. **HET experiment**
RT ATS 6
communication satellites
satellite networks

heterocyclic compounds
GS organic compounds
. cyclic compounds
. . **heterocyclic compounds**
. . . acriflavine
. . . adenosines
. . . . adenosine diphosphate
. . . . adenosine triphosphate
. . . . cyclic AMP
. . . alkaloids
. . . . atropine
. . . . betaines
. . . . caffeine
. . . . colchicine
. . . . ergotamine
. . . . hyoscine
. . . . lysergine

. . . . morphine
. . . . nicotinamide
. . . . nicotine
. . . . pilocarpine
. . . . reserpine
. . . . strychnine
. . . . tropyl compounds
. . . anisole
. . . ascorbic acid
. . . azines
. . . . cyanurates
. . . . cyanuric acid
. . . . meclizine
. . . . methylene blue
. . . . phenothiazines
. . . azoles
. . . . acetazolamide
. . . . oxazole
. . . . pyrroles
. . . . . carbazoles
. . . . . indoles
. . . . . tryptophan
. . . azulene
. . . bioflavonoids
. . . biotin
. . . carnitine
. . . cyanocobalamin
. . . cytidylic acid
. . . dimenhydrinate
. . . endrin
. . . ethylene oxide
. . . folic acid
. . . furans
. . . . tetrahydrofuran
. . . guanethidine
. . . HMX
. . . nicotinic acid
. . . phthalocyanin
. . . phylloquinone
. . . piperidine
. . . promethazine
. . . purines
. . . . adenines
. . . . xanthines
. . . . . caffeine
. . . . . guanines
. . . . . uric acid
. . . pyridines
. . . pyridoxine
. . . pyrimidines
. . . . alloxan
. . . . thymidine
. . . . thymine
. . . . uracil
. . . RDX
. . . retinene
. . . riboflavin
. . . tetracyclines
. . . tetrazoles
. . . thiamine
. . . thiazine (trademark)
. . . thiophenes
. . . tocopherol
. . . trimethadione
RT∞ chemical compounds

heterodyning
DEF Mixing two radio signals of different frequencies to produce a third signal which is of lower frequency; i.e., to produce beating.
GS **heterodyning**
. optical heterodyning
RT autodynes
demodulation
intermediate frequency amplifiers
mixing circuits
superheterodyne receivers

heterogeneity
DEF Having different properties at different points.
RT deviation
impurities
inclusions
inhomogeneity
range (extremes)
sampling
standard deviation
statistical tests
variability
variance (statistics)

heterojunction devices
DEF Electronic devices utilizing junctions between different semiconducting materials. The characteristics and performance of the devices are dependent on the relative lineup of the energy bands at the junctions.
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **heterojunction devices**
. . . . high electron mobility transistors
. . . . . MODFETS
RT band structure of solids
distributed feedback lasers
gallium arsenides
homojunctions
ITO (semiconductors)
junction diodes
modulation doping
quantum efficiency
quantum well lasers
quantum wells
semiconductor junctions
solar energy conversion
waveguide lasers

heterojunctions
DEF Junctions between semiconductors that differ in their doping level conductivities, and also in their atomic or alloy compositions.
GS semiconductor junctions
. **heterojunctions**
RT homojunctions
junction diodes
modulation doping
quantum wells
silicon junctions
solar cells
thin films
tunnel junctions

heterophoria
UF *exophoria*
RT vision

heterosphere
DEF The upper portion of a two part division of the atmosphere according to the general homogeneity of atmospheric composition; the layer above the homosphere. The heterosphere is characterized by variation in composition and mean molecular weight of constituent gases. This region starts at 80 to 100 kilometers above the Earth, and therefore closely coincides with the ionosphere and the thermosphere.
GS Earth atmosphere
. **heterosphere**
environments
. **heterosphere**
RT chemosphere
Earth ionosphere
Earth magnetosphere
exosphere
lower atmosphere
middle atmosphere
thermosphere
upper atmosphere

heterotrophs
RT animals
autotrophs
metabolism
plants (botany)

heuristic methods
RT automata theory
computer programming
∞ methodology
simulation
sorting algorithms

HEUS rocket engines
GS engines
. rocket engines
. . **HEUS rocket engines**
RT rocket engine control
rocket vehicles

Hewlett-Packard computers
GS data processing equipment
. computers
. . digital computers
. . . **Hewlett-Packard computers**

hexadiene
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . dienes
. . . . **hexadiene**

hexagonal cells
RT∞ cells
crystal lattices
honeycomb structures

hexagons
GS geometry
. Euclidean geometry
. . polygons
. . . **hexagons**

hexahedrite
GS magnesium compounds
. magnesium sulfates
. . **hexahedrite**
minerals
. **hexahedrite**
sulfur compounds
. sulfates
. . magnesium sulfates
. . . **hexahedrite**

hexamethonium
RT ammonium compounds
anticonvulsants

hexamethylenetetramine
GS amines
. **hexamethylenetetramine**

hexanitrostilbene
UF *HNST*
RT stilbene

hexenes
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkenes
. . . . **hexenes**
RT cyclohexane

hydrocarbon fuels

Hexogenes (trademark)
GS acids
. carboxylic acids
. . Hexogenes (trademark)
organic compounds
. carboxylic acids
. . Hexogenes (trademark)

hexokinase
GS biopolymers
. proteins
. . enzymes
. . . hexokinase
organic compounds
. proteins
. . enzymes
. . . hexokinase

hexoses
GS organic compounds
. carbohydrates
. . sugars
. . . monosaccharides
. . . . hexoses
. . . . . galactose
. . . . . glucose

hexyl compounds
GS alkyl compounds
. hexyl compounds
RT∞ chemical compounds

HF lasers
UF *hydrogen fluoride lasers*
GS stimulated emission devices
. lasers
. . gas lasers
. . . HF lasers
RT chemical lasers
infrared lasers
TEA lasers

HFB-320 aircraft
UF *Hamburger HFB-320 aircraft*
GS Hamburger aircraft
. HFB-320 aircraft
jet aircraft
. HFB-320 aircraft
monoplanes
. HFB-320 aircraft
passenger aircraft
. HFB-320 aircraft
transport aircraft
. HFB-320 aircraft
RT∞ aircraft

HFIR
USE high flux isotope reactors

HFIR (reactor)
USE high flux isotope reactors

HH-43 helicopter
UF *HH-43B helicopter*
Huskie helicopter
GS Kaman aircraft
. HH-43 helicopter
utility aircraft
. HH-43 helicopter
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . HH-43 helicopter

HH-43B helicopter
USE HH-43 helicopter

HH-65 helicopter
(added August 1995)
GS V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . HH-65 helicopter
RT∞ aircraft
rescue operations

HHX helicopter
USE H-53 helicopter

hibernation
RT adaptation
thermoregulation

HICAT (radar technique)
USE high resolution coverage antennas

HICAT project
USE high resolution coverage antennas

hierarchies
GS classifications
. hierarchies
. . BBGKY hierarchy
. . dichotomies

Higgs bosons
(added April 1994)
GS particles
. elementary particles
. . bosons
. . . Higgs bosons
. nuclear particles
. . bosons
. . . Higgs bosons
RT broken symmetry
electroweak model
particle theory

high acceleration
GS rates (per time)
. acceleration (physics)
. . high acceleration
RT∞ acceleration
acceleration stresses (physiology)
acceleration tolerance
electron runaway (plasma physics)
mechanical shock
∞ motion
shock resistance

high alt target and background measurement
UF *HITAB program*
RT∞ measurement
target acquisition

high altitude
UF *high altitude flight*
GS altitude
. high altitude
RT midaltitude
skyhook balloons
upper atmosphere

high altitude balloons
GS expandable structures
. inflatable structures
. . balloons
. . . high altitude balloons
. . . . jimsphere balloons
. . . . skyhook balloons
. . . . superpressure balloons
RT balloon-borne instruments
gas bags
meteorological balloons
ROBIN balloons
rockoons

high altitude breathing
GS respiration
. high altitude breathing
RT altitude tolerance
∞ breathing
emergency life sustaining systems
hypobaric atmospheres
oxygen masks

high altitude environments
GS environments
. high altitude environments
RT altitude simulation
altitude tests
altitude tolerance
escape capsules
hypobaric atmospheres
low pressure
low temperature environments
mountain inhabitants
thermal vacuum tests
timberline
vacuum chambers

high altitude flight
USE flight
high altitude

high altitude nuclear detection
GS detection
. high altitude nuclear detection
RT space surveillance (spaceborne)
Vela satellites

high altitude pressure
GS pressure
. low pressure
. . high altitude pressure
RT altitude tolerance
atmospheric pressure
hypobaric atmospheres
vacuum chambers

high altitude sounding projectile
USE WASP sounding rocket

high altitude tests
GS altitude tests
. high altitude tests
RT background radiation
environmental tests
Fishbowl Operation
flight tests
full scale tests
test vehicles
∞ tests
Vela satellites

high aspect ratio
GS ratios
. aspect ratio
. . high aspect ratio

high aspect ratio wings
USE slender wings

high current
GS electric current
. high current
RT high voltages
plasma currents

high definition television
(added August 1990)
UF *HDTV*
GS television systems
. high definition television
RT communication equipment

digital television
high resolution
image resolution
imaging techniques
television transmission
video communication
video data

high dispersion spectrographs
GS measuring instruments
. optical measuring instruments
. . photometers
. . . ultraviolet spectrometers
. . . . **high dispersion spectrographs**
. radiation measuring instruments
. . actinometers
. . . ultraviolet detectors
. . . . ultraviolet spectrometers
. . . . . **high dispersion spectrographs**
. . photometers
. . . ultraviolet spectrometers
. . . . **high dispersion spectrographs**
. spectrometers
. . ultraviolet spectrometers
. . . **high dispersion spectrographs**
optical equipment
. optical measuring instruments
. . photometers
. . . ultraviolet spectrometers
. . . . **high dispersion spectrographs**
spectrographs
. **high dispersion spectrographs**
RT ultraviolet spectra

High Eccentric Lunar Occultation Satellite
USE **Exosat satellite**

high electron mobility transistors
(added November 1992)
DEF A recently developed field effect transistor based on the technique of modulation doping of GaAs/Al(x)Ga(1-x) as heterojunctions. This technique achieves high mobility in part by introducing carriers into high purity GaAs from donor ions in an adjacent AlGaAs layer, the electrons and ions being separated by the built-in heterojunction potential. Used for HEMT (electronics)
UF *HEMT (electronics)*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . heterojunction devices
. . . . **high electron mobility transistors**
. . . . . MODFETS
. . . transistors
. . . . **high electron mobility transistors**
. . . . . MODFETS
RT electron mobility
field effect transistors
indium aluminum arsenides
modulation doping

High Energy Astronomy Observatories
USE **HEAO**

High Energy Astronomy Observatory 1
USE **HEAO 1**

High Energy Astronomy Observatory 2
USE **HEAO 2**

High Energy Astronomy Observatory 3
USE **HEAO 3**

High Energy Astronomy Observatory 4
USE **HEAO 4**

High Energy Astronomy Observatory A
USE **HEAO 1**

High Energy Astronomy Observatory B
USE **HEAO 2**

High Energy Astronomy Observatory C
USE **HEAO 3**

High Energy Astronomy Observatory D
USE **HEAO 4**

high energy electrons
GS particles
. charged particles
. . energetic particles
. . . electrons
. . . . **high energy electrons**
. . . . . relativistic electron beams
. corpuscular radiation
. . energetic particles
. . . electrons
. . . . **high energy electrons**
. . . . . relativistic electron beams
. elementary particles
. . fermions
. . . leptons
. . . . electrons
. . . . . **high energy electrons**
. . . . . relativistic electron beams
RT SCATHA satellite

high energy fuels
SN (HEAT CONTENT GREATER THAN OR EQUAL TO APPROXIMATELY 25,000 BTU/LB)
UF *HEF (high energy fuels)*
GS fuels
. chemical fuels
. . **high energy fuels**
RT additives
boron compounds
catalysts
cryogenic rocket propellants
hybrid propellants
hydrocarbon fuels

high energy interactions
GS particle interactions
. elementary particle interactions
. . **high energy interactions**
. . . strong interactions (field theory)
RT annihilation reactions
beam interactions
fission products
∞ interactions
nuclear explosions
nuclear fission
nuclear fusion
nuclear interactions
nuclear radiation
nuclear reactions
nuclear research
pair production
particle production
Pomeranchuk theorem
thermonuclear reactions
vector dominance model

high energy oxidizers
GS oxidizers
. **high energy oxidizers**
RT rocket oxidizers

high energy propellants
GS propellants
. **high energy propellants**
. . Domino propellants
RT cryogenic rocket propellants
gaseous rocket propellants
hybrid propellants
liquid rocket propellants

high field magnets
UF *supermagnets*
GS magnets
. electromagnets
. . **high field magnets**
RT superconducting magnets

high flux beam reactors
RT nuclear reactors

high flux isotope reactors
UF *HFIR*
HFIR (reactor)
GS nuclear reactors
. **high flux isotope reactors**
RT neutron flux density

high frequencies
SN (3 - 30 MHZ)
GS frequencies
. radio frequencies
. . **high frequencies**
RT decametric waves
intermediate frequencies
low frequencies
maximum usable frequency
ring discharge
short wave radiation
short wave radio transmission
toroidal discharge

high gain
GS amplification
. **high gain**
RT pilot induced oscillation
power gain
transfer functions

high gravity (acceleration)
USE **high gravity environments**

high gravity environments
UF *high gravity (acceleration)*
GS environments
. **high gravity environments**
rates (per time)
. acceleration (physics)
. . **high gravity environments**
RT ∞ acceleration
centrifuges
extraterrestrial environments
gravitation
human centrifuges
microgravity
rotating environments

high impulse
GS impulses
. **high impulse**
RT ∞ force
propulsion

high intensity lasers
USE **high power lasers**

high latitudes
USE **polar regions**

high level languages
DEF Computer languages whose instructions or statements each correspond to several machine language instructions.
UF *higher order languages*
GS languages

. programming languages
. . **high level languages**
. . . Ada (programming language)
. . . C (programming language)
. . . . C++ (programming language)
RT communication theory
language programming
symbols

high melting compounds
USE **refractory materials**

high pass filters
DEF Wave filters having a single transmission band extending from some critical or cutoff frequency, not zero, up to infinite frequency.
RT bandstop filters
electric filters
electromagnetic wave filters
∞ **filters**
microwave filters
optical filters

high polymers
RT∞ **polymers**

high power lasers
DEF Stimulated emission devices having high energy flux density outputs. Used for high intensity lasers.
UF *high intensity lasers*
GS stimulated emission devices
. **lasers**
. . **high power lasers**
. . . Nova Laser System
. . . Shiva laser system
RT glass lasers
laser fusion
laser outputs
optical communication

high pressure
GS pressure
. **high pressure**
RT anticyclones
critical pressure
degenerate matter
hyperbaric chambers
low pressure
supercritical pressures
transition pressure
vacuum

high pressure oxygen
GS gases
. compressed gas
. . **high pressure oxygen**
RT fire prevention
oxygen
pressure
spacecraft cabin atmospheres

high Q
USE **Q factors**

∞ **high resistance**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT chemical properties
electrical resistance
flow resistance
mechanical properties
∞ physical properties
∞ resistance
ruggedness
thermal resistance

high resolution
GS resolution
. **high resolution**
RT accuracy
angular resolution
high definition television
precision
spatial resolution

high resolution coverage antennas
UF *HICAT (radar technique)*
HICAT project
GS antennas
. **high resolution coverage antennas**
RT radar antennas
radar resolution
resolution

high Reynolds number
SN (RN ABOVE 3,000)
DEF A Reynolds number above the critical Reynolds number of a sphere.
GS dimensionless numbers
. Reynolds number
. . **high Reynolds number**
ratios
. Reynolds number
. . **high Reynolds number**
RT low Reynolds number

high speed
UF *high speed flight*
GS rates (per time)
. **high speed**
velocity
. **high speed**
RT airspeed
escape velocity
ground speed
hypersonic speed
landing speed
light speed
relativistic velocity
rotor speed
supersonic speed

high speed cameras
GS optical equipment
. cameras
. . **high speed cameras**
. . . framing cameras
photographic equipment
. cameras
. . **high speed cameras**
. . . framing cameras
RT ballistic cameras
frame photography
high speed photography
rotating mirrors
streak photography
stroboscopes

high speed flight
USE **flight**
high speed

high speed photography
GS imagery
. photography
. . **high speed photography**
RT high speed cameras
photographic recording

high speed transportation
USE **rapid transit systems**

high strength
GS mechanical properties
. **high strength**
RT compressive strength
shear strength
∞ strength
tensile strength
tensile stress
yield strength

high strength alloys
GS alloys
. **high strength alloys**
. . Astroloy (trademark)
. . high strength steels
. . . maraging steels
RT aluminum–lithium alloys
tensile properties

high strength steels
UF *low alloy steels*
GS alloys
. high strength alloys
. . **high strength steels**
. . . maraging steels
. iron alloys
. . **steels**
. . . **high strength steels**
. . . . maraging steels
RT carbon steels

high temperature
GS temperature
. **high temperature**
RT sialon
temperature measurement

high temperature air
UF *hot air*
GS gases
. gas mixtures
. . air
. . . **high temperature air**
. high temperature gases
. . **high temperature air**
high temperature fluids
. high temperature gases
. . **high temperature air**
mixtures
. solutions
. . gas mixtures
. . . air
. . . . **high temperature air**

high temperature alloys
USE **heat resistant alloys**

high temperature environments
GS environments
. **high temperature environments**
RT dry heat
heat acclimatization
lunar temperature
thermal environments
thermal fatigue

high temperature fatigue
USE **thermal fatigue**

high temperature fluids
GS **high temperature fluids**
. high temperature gases
. . high temperature air
RT∞ fluids
hydraulic fluids
plasmas (physics)
working fluids

high temperature gas cooled reactors
UF *HTGR*
GS nuclear reactors

. gas cooled reactors
. . high temperature nuclear reactors
. . . **high temperature gas cooled reactors**
. nuclear research and test reactors
. . high temperature nuclear reactors
. . . **high temperature gas cooled reactors**
RT nuclear power reactors

high temperature gases
UF *hot gas systems*
hot gases
hot jet exhaust
GS **gases**
. **high temperature gases**
. . high temperature air
high temperature fluids
. **high temperature gases**
. . high temperature air
RT combustion products
exhaust emission
ionized gases
pneumatic probes
rarefied gases
shock wave propagation

high temperature lubricants
GS lubricants
. **high temperature lubricants**
RT gas bearings
gas lubricants
thermal resistance

high temperature materials
USE **refractory materials**

high temperature nuclear reactors
UF *Los Alamos Turret Reactor*
UHTREX (nuclear reactors)
GS nuclear reactors
. gas cooled reactors
. . **high temperature nuclear reactors**
. . . high temperature gas cooled reactors
. nuclear research and test reactors
. . **high temperature nuclear reactors**
. . . high temperature gas cooled reactors
RT nuclear propulsion
reactor design
reactor technology
∞ reactors

high temperature plasmas
UF *hot plasmas*
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **high temperature plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **high temperature plasmas**
RT Boltzmann-Vlasov equation
collisional plasmas
dense plasmas
electron plasma
Helios Project
relativistic plasmas
strongly coupled plasmas
thermal plasmas

high temperature propellants
GS propellants
. **high temperature propellants**
RT electrothermal engines
gelled propellants
gelled rocket propellants
ion propulsion
nuclear propulsion
plasma engines
solid propellants
storable propellants

high temperature research
GS research
. **high temperature research**
RT plasma generators
refractory materials

high temperature superconductors
(added December 1992)
DEF New superconducting materials consisting of mixed metal oxide ceramics that maintain their superconductivity at higher temperature ranges (above 24 K) than the more traditional superconductors.
UF *HTSC (superconductors)*
GS conductors
. superconductors (materials)
. . **high temperature superconductors**
. . . BSCCO superconductors
. . . YBCO superconductors
RT barium oxides
ceramics
critical temperature
cryogenic gyroscopes
cryogenic magnets
cryogenics
electrical resistivity
Josephson junctions
liquid nitrogen
low temperature physics
metal oxides
mixed oxides
operating temperature
SIS (superconductors)
strontium oxides
superconducting magnets
superconducting power transmission
superconductivity
yttrium oxides

high temperature tests
UF *heat tests*
GS environmental tests
. **high temperature tests**
RT bomb calorimeters
calorimeters
chemical tests
cold strength
cold weather tests
cryostats
drop calorimeters
flame calorimeters
hardness tests
lubricant tests
∞ materials tests
melting points
nondestructive tests
temperature control
∞ tests
thermal expansion
thermal resistance
thermal shock
thermal stability
thermodynamic properties
transport properties

high thrust
GS thrust
. **high thrust**
RT jet thrust
low thrust
rocket thrust
thrust augmentation
variable thrust

high vacuum
GS pressure
. vacuum
. . **high vacuum**
RT cold welding
low vacuum
molecular shields
residual gas
space manufacturing
ultrahigh vacuum
vacuum apparatus
vacuum tests

High Vacuum Orbital Simulator
UF *HIVOS (simulator)*
GS simulators
. environment simulators
. . space simulators
. . . **High Vacuum Orbital Simulator**
RT space environment simulation

high voltages
GS potential energy
. electric potential
. . **high voltages**
RT electric current
high current

higher order languages
USE **high level languages**

highlands
DEF A general term for large areas of elevated or mountainous land standing prominently above adjacent low areas; mountainous regions.
RT Colorado Plateau (US)
mesas
mountains
plateaus
topography

Highly Eccentric Orbit satellites
USE **HEO satellites**

highly maneuverable aircraft
UF *HIMAT*
RT airborne/spaceborne computers
∞ aircraft
aircraft maneuvers
automatic flight control
automatic pilots
computerized simulation
fighter aircraft
flight characteristics
flight tests
remotely piloted vehicles

highways
GS roads
. **highways**
RT air bag restraint devices
bridges (structures)
construction
crashes
intersections
pavements
ramps (structures)
rapid transit systems
regional planning
streets
transportation

transportation networks
urban planning

hijacking
USE **air piracy**

Hilbert space
GS **algebra**
. vector spaces
. . Banach space
. . . **Hilbert space**
. . . . Sobolev space
analysis (mathematics)
. function space
. . Banach space
. . . **Hilbert space**
. . . . Sobolev space
. functional analysis
. . Banach space
. . . **Hilbert space**
. . . . Sobolev space
geometry
. topology
. . metric space
. . . **Hilbert space**
. . . . Sobolev space

Hilbert transformation
GS **analysis (mathematics)**
. functional analysis
. . integral transformations
. . . **Hilbert transformation**
transformations (mathematics)
. integral transformations
. . **Hilbert transformation**

Hill curves
USE **Hill method**

Hill determinant
GS **analysis (mathematics)**
. **Hill determinant**
RT **differential equations**
eigenvalues
Mathieu function

Hill lunar theory
RT Earth orbits
orbital mechanics
perturbation theory
∞ theories

Hill method
UF *Hill curves*
RT Earth orbits
∞ methodology
orbital mechanics
perturbation theory

Hiller aircraft
GS **Hiller aircraft**
. OH-5 helicopter
RT ∞ **aircraft**

Hilsch tubes
UF *vortex tubes*
RT coaxial flow
cooling
heating
∞ tubes
vortex generators
vortices

Himalayas
GS landforms
. mountains
. . **Himalayas**
RT **Asia**
Bhutan
India
Pakistan
Sikkim
Tibet

Himalia
(added July 1995)
DEF A natural satellite of Jupiter, orbiting at a mean distance of 11,480,000 kilometers.
GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . **Himalia**
RT Jupiter (planet)

HIMAT
USE **highly maneuverable aircraft**

hindrance
USE **constraints**

hinge moments
USE **torque**

hinged rotor blades
USE **hinges**
rotary wings

hingeless rotors
USE **rigid rotors**

hinges
UF *hinged rotor blades*
GS **hinges**
. flapping hinges
RT bearingless rotors
pivots
swivels

HIP (process)
USE **hot isostatic pressing**

Hipparcos satellite
DEF An ESA astrometric satellite to determine trigonometric parallaxes, proper motions, and positions of 100,000 stars, mainly for stars brighter than magnitude 10. The satellite was launched in August 1989.
GS **artificial satellites**
. ESA satellites
. . **Hipparcos satellite**
ESA spacecraft
. ESA satellites
. . **Hipparcos satellite**
RT astrometry
European space programs
spaceborne astronomy
stellar motions
stellar parallax

hippocampus
GS anatomy
. nervous system
. . central nervous system
. . . brain
. . . . **hippocampus**

hippuric acid
GS acids
. amino acids
. . **hippuric acid**
organic compounds
. amino acids
. . **hippuric acid**

His bundle
RT cardiac auricles
cardiac ventricles
electrophysiology
heart diseases
heart function
nerves

hiss
DEF Random noise in the audiofrequency range, having subjective characteristics analogous to prolonged sibilant sounds.
GS electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . atmospherics
. . . . ionospherics
. . . . . **hiss**

histamines
GS drugs
. **histamines**
RT amines
antihistaminics
itching

histidine
GS acids
. amino acids
. . **histidine**
amines
. **histidine**
organic compounds
. amino acids
. . **histidine**

histochemical analysis
DEF In biochemistry, the analysis of chemical components in tissues.
RT bioassay
biochemistry
cells (biology)
organic chemistry
tissues (biology)

histograms
RT discrete functions
graphs (charts)
normal density functions

histology
GS medical science
. **histology**
RT epithelium
morphology
platelets

histories
GS **histories**
. case histories
RT documentation
museums
paleontology
peacetime
records

HITAB program
USE **high alt target and background measurement**

HIV (virus)
USE **human immunodeficiency virus**

HIVOS (simulator)
USE **High Vacuum Orbital Simulator**

HL-10 reentry vehicle
GS gliders
. **HL-10 reentry vehicle**
lifting bodies
. lifting reentry vehicles
. . **HL-10 reentry vehicle**
reentry vehicles
. maneuverable reentry bodies

. . lifting reentry vehicles
. . . HL-10 reentry vehicle
RT hypersonic gliders

HLD-35 reentry vehicle
GS lifting bodies
. lifting reentry vehicles
. . HLD-35 reentry vehicle
reentry vehicles
. maneuverable reentry bodies
. . lifting reentry vehicles
. . . HLD-35 reentry vehicle
RT hypersonic gliders

HLLV
USE **heavy lift launch vehicles**

HMD (displays)
USE **helmet mounted displays**

HMX
UF *cyclotetramethylene tetranitramine*
tetranitrotetrazacyclooctane
GS explosives
. **HMX**
nitrogen compounds
. azo compounds
. . **HMX**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **HMX**
propellants
. rocket propellants
. . solid rocket propellants
. . . **HMX**
. solid propellants
. . solid rocket propellants
. . . **HMX**
pyrotechnics
. **HMX**

HNPF (Hallam Nuclear Power Facility)
USE **Hallam Nuclear Power Facility**

HNST
USE **hexanitrostilbene**

HO-4 helicopter
USE **OH-4 helicopter**

HO-5 helicopter
USE **OH-6 helicopter**

HO-6 helicopter
USE **OH-6 helicopter**

hodographs
RT Chaplygin equation
kinematics
vector spaces

hodoscopes
GS measuring instruments
. radiation measuring instruments
. . **hodoscopes**
RT radiation counters
scintillating fibers

hogbacks
USE **ridges**

hohlraums
DEF In radiation thermodynamics, cavities whose walls are in radiative equilibrium with the radiant energy with the cavity.
RT black body radiation
emissivity

Hohmann trajectories
USE **elliptical orbits**
transfer orbits

Hohmann transfer orbits
USE **elliptical orbits**
transfer orbits

holders
GS **holders**
. flame holders
RT anchors (fasteners)
∞ bands
bolts
brackets
clamps
clips
fasteners
jigs
latches
lugs
mechanical devices
nuts (fasteners)
pins
positioning devices (machinery)
rivets
screws
∞ spikes
splines
straps
studs (structural members)
zippers

∞ **holding**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT constraints
delay
retaining
stopping

hole burning
DEF A laser process that depletes, spatially or spectrally, the electron/hole pair density in a region of space or frequency of high coherent light, being spatial hole burning and spectral hole burning respectively.
RT computer storage devices
holography
laser applications
lasers
lasing
memory (computers)

∞ **hole distribution**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT current distribution
hole distribution (electronics)
hole distribution (mechanics)

hole distribution (electronics)
GS distribution (property)
. **hole distribution (electronics)**
RT charge distribution
current distribution
∞ hole distribution
holes (electron deficiencies)
semiconductors (materials)

hole distribution (mechanics)
GS distribution (property)
. **hole distribution (mechanics)**
RT cavities
∞ hole distribution
holes (mechanics)
perforated shells
porosity
stress concentration
void ratio

hole geometry (mechanics)
DEF The sizes, locations, and shapes of perforations created in materials.
RT fracture mechanics
holes (mechanics)
perforated plates
perforated shells
stress concentration
stress intensity factors
structural analysis

hole mobility
GS electrical properties
. carrier mobility
. . **hole mobility**
mobility
. carrier mobility
. . **hole mobility**
transport properties
. carrier mobility
. . **hole mobility**
RT atomic mobilities
charge carriers
electromigration
electron mobility
holes (electron deficiencies)
∞ solid state physics

∞ **holes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT boreholes
cavities
coronal holes
gaps
holes (electron deficiencies)
holes (mechanics)

holes (electron deficiencies)
(added November 1991)
UF *electron holes*
GS charge carriers
. **holes (electron deficiencies)**
RT acceptor materials
crystal defects
donor materials
electrons
excitons
hole distribution (electronics)
hole mobility
∞ holes
majority carriers
∞ materials
minority carriers
order-disorder transformations
p-type semiconductors
semiconductor plasmas
semiconductors (materials)
Suhl effect
vacancies (crystal defects)

holes (mechanics)
(added September 1988)
RT cavities
hole distribution (mechanics)
hole geometry (mechanics)
∞ holes
perforated plates
perforated shells
∞ perforation
porous boundary layer control

Holland
USE **Netherlands**

∞ **hollow**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Low tract of land surrounded by hills or mountains; small sheltered valley or basin, especially in a rugged area.
RT **cavities**
∞ **depression**
recesses

hollow cathodes
GS **electrodes**
. **cathodes**
. . **hollow cathodes**
RT **tube cathodes**
tunnel cathodes

holmium
GS **chemical elements**
. **rare earth elements**
. . **holmium**
. . . holmium isotopes
metals
. **rare earth elements**
. . **holmium**
. . . holmium isotopes

holmium isotopes
GS **chemical elements**
. **nuclides**
. . **isotopes**
. . . **holmium isotopes**
. **rare earth elements**
. . holmium
. . . **holmium isotopes**
metals
. **rare earth elements**
. . holmium
. . . **holmium isotopes**

holrammetry
RT **holography**
imaging techniques
photographic recording
photomapping
speckle holography
terrain analysis

holographic interferometry
GS **interferometry**
. **holographic interferometry**
RT **coherent light**
diffraction patterns
holographic optical elements
holography
laser outputs
Moire interferometry
scatter plates (optics)
speckle holography
wave front reconstruction

holographic optical elements
(added April 1995)
DEF Holograms used to control transmitted light beams, rather than to display images, based on the principles of diffraction.
RT **diffraction paths**
geometrical optics
holographic interferometry
imagery
laser beams
light transmission
optical paths
pulse diffraction
wave diffraction
white light holography

holographic spectroscopy
GS **spectroscopy**
. **holographic spectroscopy**
RT **Fourier transformation**
holography
spectrum analysis
wave front reconstruction

holographic subtraction
DEF A holographic technique by which two dissimilar optical fields can be subtracted to yield only their difference. Used for self subtraction holography.
UF *self subtraction holography*
RT **holography**

holography
DEF The interferometry technique used to make three-dimensional pictures of surfaces. One light beam illuminates a surface, and sets up interference patterns with a reference beam.
GS **imagery**
. **photography**
. . **holography**
. . . **acoustical holography**
. . . **microwave holography**
. . . **speckle holography**
. . . **white light holography**
RT **coherent electromagnetic radiation**
coherent light
data storage
differential interferometry
diffractive optics
hole burning
holrammetry
holographic interferometry
holographic spectroscopy
holographic subtraction
image correlators
image reconstruction
kinoform
lasers
optical memory (data storage)
photopolymers
scatter plates (optics)
spatial filtering
speckle patterns
wave front reconstruction

holomorphism
USE **analytic functions**

homeostasis
RT **acclimatization**
acid base equilibrium
adaptation
body temperature
cold tolerance
colloids
∞ **equilibrium**
fibrinogen
hormones
metabolism
nervous system
osmosis
physiology
respiratory system
skin (anatomy)
stress (physiology)
thermoregulation
thromboplastin
water balance

homeotherms
UF *warm blooded animals*
GS **animals**
. **homeotherms**
RT **birds**
body temperature
mammals
vertebrates

homing
DEF The following of a path of energy waves to or toward their source or point of reflection.
RT **automatic pilots**
beacons
guidance (motion)
missile control
radio direction finders
terminal guidance

homing devices
UF *seekers*
RT **beacons**
guidance (motion)
infrared tracking
laser guidance
missiles
navigation
navigation aids
radio beacons
radio direction finders
radio navigation
rendezvous guidance
solar compasses
trajectory control

homodyne reception
GS **signal reception**
. **homodyne reception**
RT **frequency synchronization**
radio reception

homogeneity
DEF Having the same properties at all points.
RT **anisotropic media**
homogenizing
sampling
statistical tests
unity
variance (statistics)

homogeneous turbulence
GS **turbulence**
. **homogeneous turbulence**
RT **atmospheric turbulence**
fluctuation theory
isotropic turbulence
low level turbulence
magnetohydrodynamic turbulence

homogenization
USE **homogenizing**

homogenizing
UF *homogenization*
GS **mixing**
. **homogenizing**
RT **agitation**
colloiding
compounding
dispersing
dissolving
homogeneity
premixing
∞ **separation**
suspending (mixing)

homojunctions
DEF Junctions between semiconductors that differ in their doping level conductivities but not in their atomic or alloy composition.
GS **semiconductor junctions**

. **homojunctions**
RT heterojunction devices
heterojunctions
silicon junctions
solar cells

homology
UF cohomology
RT analogies
duality theorem
matching
∞ relationships
topology

homomorphisms
GS algebra
. group theory
. . **homomorphisms**
. . . automorphisms
. . . monoids
. . . subgroups
RT field theory (algebra)
isomorphism

homopolar generators
DEF Rotating electric machines for converting mechanical power into pure direct current by utilizing poles having the same polarity at the armature.
GS electric generators
. direct power generators
. . DC generators
. . . **homopolar generators**
. rotating generators
. . **homopolar generators**
RT direct current
∞ electric equipment
electromechanical devices
∞ generators

homosphere
DEF The lower portion of a two part division of the atmosphere according to the general homogeneity of atmospheric composition; opposed to the heterosphere. The region in which there is no gross change in atmospheric composition, that is, all the atmosphere from the Earth's surface to about 90 kilometers. The homosphere is about equivalent to the neutrosphere, and includes the troposphere, stratosphere, and mesosphere; it also includes the ozonosphere and at least part of the chemosphere.
GS Earth atmosphere
. **homosphere**
RT biosphere
chemosphere
Earth ionosphere
lower atmosphere
mesosphere
middle atmosphere
ozonosphere
stratosphere
thermosphere
troposphere
upper atmosphere

homotopy theory
GS geometry
. topology
. . homotopy theory
RT curves (geometry)
fibers (mathematics)
∞ theories

homotropy
RT algebra
problem solving
set theory
topology

Honduras
GS nations
. **Honduras**
RT Central America

Honest John rocket vehicle
GS rocket vehicles
. single stage rocket vehicles
. . **Honest John rocket vehicle**
. surface to surface rockets
. . **Honest John rocket vehicle**
RT Argo rocket vehicles
EXOS sounding rocket
Hercules engine
solid propellant rocket engines
Trailblazer 1 reentry vehicle

honeycomb cores
DEF Lightweight strengthening materials of structures resembling honeycomb meshes.
GS cores
. **honeycomb cores**
honeycomb structures
. **honeycomb cores**
RT ceramic honeycombs
composite structures
low density materials
sandwich structures

honeycomb mirrors
(added August 1995)
DEF High strength to weight telescope mirrors constructed of spun-cast borosilicate glass in a honeycomb structure that optically represents a single large mirror.
GS honeycomb structures
. **honeycomb mirrors**
mirrors
. **honeycomb mirrors**
RT adaptive optics
astronomical observatories
borosilicate glass
optical correction procedure
reflecting telescopes
segmented mirrors

honeycomb structures
GS **honeycomb structures**
. honeycomb cores
. honeycomb mirrors
RT ∞ cells
ceramic honeycombs
composite structures
hexagonal cells
insulation
laminates
low density materials
metal foils
porous materials
sandwich structures
∞ structures

Honeywell 600/6000 computer
GS data processing equipment
. computers
. . analog computers
. . . **Honeywell 600/6000 computer**
. . digital computers
. . . Honeywell computers
. . . . **Honeywell 600/6000 computer**

Honeywell ADEPT computer
GS data processing equipment
. computers
. . digital computers
. . . Honeywell computers
. . . . **Honeywell ADEPT computer**

Honeywell computers
GS data processing equipment
. computers
. . digital computers
. . . **Honeywell computers**
. . . . DDP 516 computer
. . . . Honeywell 600/6000 computer
. . . . Honeywell ADEPT computer
. . . . Honeywell DDP 116 computer

Honeywell DDP 116 computer
GS data processing equipment
. computers
. . digital computers
. . . Honeywell computers
. . . . **Honeywell DDP 116 computer**

Hong Kong
RT Asia
China
nations
Taiwan

honing
RT scrapers
smoothing

Hookes law
GS laws
. **Hookes law**
RT elastic properties
fiber strength
Maxwell bodies
modulus of elasticity
shear properties
stress-strain diagrams

hooks
RT fasteners
forks
swivels

hoop column antennas
GS antennas
. **hoop column antennas**
RT large space structures
satellite communication
spacecraft communication

hoops
RT ring structures
tensile stress

Hopcalite (trademark)
GS catalysts
. **Hopcalite (trademark)**
chalcogenides
. oxides
. . metal oxides
. . . manganese oxides
. . . . **Hopcalite (trademark)**
manganese compounds
. manganese oxides
. . **Hopcalite (trademark)**
RT air purification
carbon monoxide
gas analysis

HOPE aerospace plane
(added September 1995)
UF *H-2 orbiting plane*
H-II orbiting plane
GS aerospace vehicles
. aerospace planes
. . **HOPE aerospace plane**
maneuverable spacecraft

. aerospace planes
. . **HOPE aerospace plane**
manned spacecraft
. aerospace planes
. . **HOPE aerospace plane**
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . aerospace planes
. . . . **HOPE aerospace plane**
soft landing spacecraft
. aerospace planes
. . **HOPE aerospace plane**
RT hypersonic vehicles
Japanese space program
lifting reentry vehicles
space transportation

hoppers
RT∞ containers
materials handling
packaging

horizon
DEF That great circle of the celestial sphere midway between the zenith and nadir, or a line resembling or approximating such a circle.
GS **horizon**
. event horizon
. gyro horizons
. radio horizons
RT celestial sphere
range (extremes)

horizon scanners
UF *horizon sensing*
infrared horizon scanners
GS flight instruments
. **horizon scanners**
scanners
. **horizon scanners**
RT attitude control
infrared scanners
navigation instruments
optical equipment
photometers
radio horizons
radiometers
Scanner project

horizon sensing
USE **horizon scanners**

horizontal branch stars
DEF Horizontal strips of stars on the Hertzsprung–Russell diagram of globular clusters to the left of the red giant branch.
GS celestial bodies
. stars
. . **horizontal branch stars**
RT color–magnitude diagram
giant stars
globular clusters
Hertzsprung–Russell diagram
stellar evolution
stellar luminosity
stellar spectra
stellar spectrophotometry

horizontal distribution
(added September 1992)
GS distribution (property)
. spatial distribution
. . **horizontal distribution**
RT atmospheric circulation
atmospheric composition
atmospheric models
horizontal orientation
vertical distribution

horizontal flight
RT aerodynamic balance
aircraft stability
climbing flight
cruising flight
∞ flight
flight paths
rocket flight
soaring
transition flight
turning flight

horizontal orientation
DEF The attitude of an object in reference to the plane which is perpendicular to the direction of gravity.
RT **alignment**
attitude (inclination)
directional stability
dynamic stability
horizontal distribution
∞ orientation
stabilization
vertical orientation

horizontal spacecraft landing
GS landing
. glide landings
. . **horizontal spacecraft landing**
. spacecraft landing
. . **horizontal spacecraft landing**
RT approach and landing tests (STS)
crash landing
planetary landing
soft landing
water landing

horizontal stabilizers
USE **stabilizers (fluid dynamics)**

horizontal tail surfaces
UF *tail planes*
GS airfoils
. **horizontal tail surfaces**
assemblies
. tail assemblies
. . **horizontal tail surfaces**
control surfaces
. **horizontal tail surfaces**
stabilizers (fluid dynamics)
. **horizontal tail surfaces**
tail surfaces
. **horizontal tail surfaces**
RT aerial rudders
elevators (control surfaces)
∞ surfaces
trapezoidal tail surfaces

horizontally polarized shear waves
USE **SH waves**

hormone metabolisms
GS metabolism
. **hormone metabolisms**
RT hormones

hormones
GS secretions
. endocrine secretions
. . **hormones**
. . . corticosteroids
. . . . aldosterone
. . . . hydroxycorticosteroid
. . . . cortisone
. . . estrogens
. . . hypertensin
. . . pituitary hormones
. . . . adrenocorticotropin (ACTH)
. . . prostaglandins
. . . thyroxine
RT catecholamine
endocrine systems
homeostasis
hormone metabolisms
regulatory mechanisms (biology)
steroids

horn antennas
DEF Antennas shaped like a horn.
GS antennas
. directional antennas
. . **horn antennas**
. radio antennas
. . microwave antennas
. . . **horn antennas**
. waveguide antennas
. . **horn antennas**
microwave equipment
. microwave antennas
. . **horn antennas**
radio equipment
. radio antennas
. . microwave antennas
. . . **horn antennas**
RT antenna design
lens antennas
parabolic antennas
radar antennas
Schelkunoff principle
sidelobe reduction
slot antennas

horns
RT auditory signals
Schwarzschild antennas
∞ signals
sirens
sound generators
warning
warning systems

horsepower
RT physical work
∞ power
power efficiency
work

horses
GS animals
. vertebrates
. . mammals
. . . **horses**
RT grazing
livestock

horseshoe vortices
(added July 1988)
UF *hairpin vortices*
GS vortices
. **horseshoe vortices**
RT Abrikosov theory
flow distortion
flow geometry
vortex filaments
vortex generators
vortex rings
vorticity
wakes
wing tip vortices

hoses
RT pipes (tubes)
∞ tubes

hospitals
RT evacuating (transportation)
medical equipment

hot air
USE **high temperature air**

hot atoms
DEF Atoms with high internal or kinetic energy as a result of a nuclear process such as beta decay or neutron capture.
GS atoms
. **hot atoms**
RT beta particles
decay
neutron decay

hot cathodes
DEF Cathodes that function primarily by the process of thermionic emission.
GS electrodes
. cathodes
. . tube cathodes
. . . **hot cathodes**
RT Bayard–Alpert ionization gages
ionization gages
thermionic cathodes

hot corrosion
DEF The corrosion at high temperatures as a result of the reduction of protective oxide coatings and scales and the subsequent accelerated oxidation.
GS corrosion
. **hot corrosion**
RT coatings
damage
degradation
deterioration
erosion
gas–metal interactions
metal coatings
oxidation
pitting
rusting
scale (corrosion)
surface properties
temperature dependence

hot cycle propulsion system
USE **tip driven rotors**

hot electrons
GS particles
. charged particles
. . energetic particles
. . . electrons
. . . . **hot electrons**
. corpuscular radiation
. . energetic particles
. . . electrons
. . . . hot electrons
. elementary particles
. . fermions
. . . leptons
. . . . electrons
. . . . . **hot electrons**

hot extruding
USE **extruding**

hot forming
USE **hot working**

hot gas systems
USE **high temperature gases**

hot gases
USE **high temperature gases**

hot isostatic pressing
DEF A thermomechanical process for forming metal–powder compacts or ceramic shapes by use of isostatically applied gas pressure in order to achieve high density in the treated material. Used for HIP (process).
UF *HIP (process)*
GS forming techniques
. pressing (forming)
. . hot pressing
. . . **hot isostatic pressing**
hardening (materials)
. hot pressing
. . **hot isostatic pressing**
thermomechanical treatment
. hot pressing
. . **hot isostatic pressing**
RT coining
cold pressing
compacting
forging
isostatic pressure
metal working
∞ pressing
sintering
stamping
upsetting

hot jet exhaust
USE **high temperature gases**
jet exhaust

hot jets
USE **jet flow**

hot machining
GS machining
. **hot machining**
RT forming techniques

hot plasmas
USE **high temperature plasmas**

hot pressing
DEF The simultaneous heating and molding of a compact.
GS forming techniques
. pressing (forming)
. . **hot pressing**
. . . hot isostatic pressing
hardening (materials)
. **hot pressing**
. . hot isostatic pressing
thermomechanical treatment
. **hot pressing**
. . hot isostatic pressing
RT coining
cold pressing
compacting
forging
metal working
∞ pressing
sintering
stamping
upsetting

hot stars
GS celestial bodies
. **stars**
. . early stars
. . . **hot stars**
. . . . A stars
. . . . B stars
. . . . . shell stars
. . . . . Sigma Orionis
. . . . blue stars
. . . . O stars
. . . . white dwarf stars
. . . . Wolf–Rayet stars
RT cataclysmic variables
peculiar stars
red dwarf stars

hot surfaces
RT heat transfer
Rayleigh–Benard convection
∞ surfaces

hot water rocket engines
GS engines
. rocket engines
. . **hot water rocket engines**

hot weather
GS weather
. **hot weather**
RT heat stroke
summer
tropical regions

hot working
DEF Controlled mechanical operations for shaping a product at temperatures above the recrystallization temperature. Used for hot forming.
UF *hot forming*
GS forming techniques
. **hot working**
. . ausforming
RT bulging
forging
metal drawing
metal spinning
metal working
pultrusion
shearing
upsetting

hot–film anemometers
GS measuring instruments
. anemometers
. . **hot–film anemometers**
RT flow measurement
meteorological instruments
sonic anemometers
velocity measurement
wind (meteorology)
wind measurement
wind vanes
wind velocity
wind velocity measurement

hot–wire anemometers
GS measuring instruments
. anemometers
. . **hot–wire anemometers**
RT flow measurement
flowmeters
meteorological instruments
velocity measurement

hot–wire flowmeters
UF *hot–wire turbulence meters*
GS measuring instruments
. flowmeters
. . **hot–wire flowmeters**
RT Pirani gages
plasma electrodes
thermal conductivity
turbulence meters

hot-wire turbulence meters
USE **hot-wire flowmeters**
turbulence meters

HOTOL launch vehicle
DEF A British unmanned horizontal takeoff and landing single-stage-to-orbit launch vehicle. Later launches will be manned.
GS **aerospace vehicles**
. **aerospace planes**
. . **HOTOL launch vehicle**
launch vehicles
. **reusable launch vehicles**
. . **single stage to orbit vehicles**
. . . **HOTOL launch vehicle**
maneuverable spacecraft
. **aerospace planes**
. . **HOTOL launch vehicle**
manned spacecraft
. **aerospace planes**
. . **HOTOL launch vehicle**
reentry vehicles
. **recoverable spacecraft**
. . **reusable spacecraft**
. . . **aerospace planes**
. . . . **HOTOL launch vehicle**
. . . **single stage to orbit vehicles**
. . . . **HOTOL launch vehicle**
soft landing spacecraft
. **aerospace planes**
. . **HOTOL launch vehicle**
unmanned spacecraft
. **HOTOL launch vehicle**
RT **launch vehicle configurations**
space shuttles
space transportation
spacecraft launching
UK space program
∞ **vehicles**

hotshot wind tunnels
GS **test facilities**
. **wind tunnels**
. . **hypersonic wind tunnels**
. . . **hotshot wind tunnels**
. . **hypervelocity wind tunnels**
. . . **hotshot wind tunnels**
RT **blowdown wind tunnels**
shock tubes
shock tunnels

Hound Dog missile
GS **missiles**
. **air to surface missiles**
. . **Hound Dog missile**
RT **turbojet engines**

Householder transformations
GS **transformations (mathematics)**
. **Householder transformations**
RT **problem solving**

housekeeping (spacecraft)
GS **cleaning**
. **housekeeping (spacecraft)**
cleanliness
. **housekeeping (spacecraft)**
RT **hygiene**
sanitation
sterilization
washing

housings
GS **housings**
. **cowlings**
. **doghouses (electronics)**
. **radomes**
RT ∞ **containers**
coverings
domes (structural forms)
enclosure
enclosures
fairings
guards (shields)
nacelles
perforated shells
protection
protectors
protuberances
shells (structural forms)
shielding
walls

Houston (TX)
GS **cities**
. **Houston (TX)**
RT **texas**

hovercraft
USE **ground effect machines**

hovercraft ground effect machines
UF *HD-1 ground effect machines*
GS **ground effect machines**
. **hovercraft ground effect machines**
RT ∞ **aircraft**
research aircraft
water takeoff and landing aircraft

hovering
GS **maneuvers**
. **hovering**
RT **aerodynamic stability**
Cushioncraft ground effect machine
flutter
ground effect machines
hovering rocket vehicles
terrain following
transition flight
V/STOL aircraft
vertical flight
whirl towers

hovering rocket vehicles
GS **rocket vehicles**
. **hovering rocket vehicles**
RT **hovering**
soft landing spacecraft
∞ **vehicles**

hovering stability
GS **dynamic characteristics**
. **dynamic stability**
. . **motion stability**
. . . **aircraft stability**
. . . . **hovering stability**
stability
. **dynamic stability**
. . **motion stability**
. . . **aircraft stability**
. . . . **hovering stability**
RT **attitude stability**
directional stability
gyroscopic stability
lateral stability
longitudinal stability
low speed stability
whirl towers

howitzers
GS **weapons**
. **guns (ordnance)**
. . **artillery**
. . . **howitzers**
RT **ballistics**
gun launchers
gunnery training

HP-115 aircraft
UF *Handley Page HP-115 aircraft*
GS **Handley Page aircraft**
. **HP-115 aircraft**
jet aircraft
. **HP-115 aircraft**
monoplanes
. **HP-115 aircraft**
research vehicles
. **research aircraft**
. . **HP-115 aircraft**
tailless aircraft
. **HP-115 aircraft**
RT ∞ **aircraft**
wing planforms

HPRR
USE **Health Physics Research Reactor**

HR diagram
USE **Hertzsprung-Russell diagram**

HRB-1 helicopter
USE **CH-46 helicopter**

HS-125 aircraft
USE **DH 125 aircraft**

HS-748 aircraft
UF *AVRO Whitworth HS-748 aircraft*
GS **Hawker Siddeley aircraft**
. **HS-748 aircraft**
jet aircraft
. **turboprop aircraft**
. . **HS-748 aircraft**
monoplanes
. **HS-748 aircraft**
passenger aircraft
. **HS-748 aircraft**
RT ∞ **aircraft**

HS-801 aircraft
GS **Hawker Siddeley aircraft**
. **HS-801 aircraft**
jet aircraft
. **HS-801 aircraft**
reconnaissance aircraft
. **HS-801 aircraft**
RT **aerial reconnaissance**
∞ **aircraft**
observation aircraft
photography
photoreconnaissance

HSS-2 helicopter
USE **SH-3 helicopter**

HTGR
USE **high temperature gas cooled reactors**

HTML
USE **document markup languages**

HTPB propellants
DEF Solid rocket propellants containing hydroxyl terminated polybutadiene as bonding material.
GS **propellants**
. **rocket propellants**
. . **solid rocket propellants**
. . . **HTPB propellants**
. **solid propellants**
. . **solid rocket propellants**
. . . **HTPB propellants**
RT **plastic propellants**
polybutadiene

HTSC (superconductors)
USE **high temperature superconductors**

HU-1 helicopter
USE **UH-1 helicopter**

HU2K-1 helicopter
USE **UH-2 helicopter**

Hubble constant
DEF The rate at which the velocity of recession of the galaxies increases with distance.
GS constants
. **Hubble constant**
RT cosmology
galaxies
irregular galaxies
red shift
velocity measurement

Hubble diagram
GS cosmology
. **Hubble diagram**
RT barred galaxies
galactic radiation
galaxies
irregular galaxies
red shift
velocity measurement

Hubble Space Telescope
UF *Large Space Telescope*
LST
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **Hubble Space Telescope**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Hubble Space Telescope**
telescopes
. spaceborne telescopes
. . **Hubble Space Telescope**
RT faint object camera
Space Shuttle payloads
spaceborne astronomy
ultraviolet astronomy

hubs
UF *rotor hubs*
RT spokes
wheels

Hudson Bay (Canada)
GS bays (topographic features)
. **Hudson Bay (Canada)**
RT Canada

Hudson River (NY-NJ)
GS rivers
. **Hudson River (NY-NJ)**
RT New Jersey
New York

Hueckel theory
RT∞ theories

Hughes aircraft
GS **Hughes aircraft**
. AH-64 helicopter
. H-17 helicopter
. OH-6 helicopter
. TH-55 helicopter
. XV-9A aircraft
RT∞ aircraft

Hugoniot adiabat
USE **Hugoniot equation of state**

Hugoniot equation of state
UF *Hugoniot adiabat*
GS equations of state
. **Hugoniot equation of state**
RT compressible flow
∞ equations
loads (forces)
one dimensional flow
shock waves

HUL
USE **hardware utilization lists**

hulls (structures)
GS **hulls (structures)**
. ship hulls
RT aircraft structures
bays (structural units)
bulkheads
fuselages
hydrofoils
keels
metal shells
perforated shells
seaplanes
shells (structural forms)
skin (structural member)
strakes
∞ structures
SWATH (ship)

hum
DEF Electrical disturbance at the power supply frequency or harmonics thereof.
RT acoustics
∞ interference
∞ noise

human behavior
GS behavior
. **human behavior**
RT boredom
detachment
disorders
dithers
emotions
extroversion
introversion
lethargy
neuropsychiatry
panic

human beings
UF *man*
GS animals
. vertebrates
. . mammals
. . . primates
. . . . **human beings**
RT aborigines
anthropology
census
children
chimpanzees
clinical medicine
cultural resources
demography
females
males
man environment interactions
parents
patients
race factors
races (anthropology)
youth

human body
GS anatomy
. **human body**
RT appendages
∞ bodies
body measurement (biology)
exercise physiology
limbs (anatomy)
lumbar region
posture
sciatic region

human centrifuges
UF *piloted centrifuges*
GS centrifuges
. **human centrifuges**
RT acceleration tolerance
artificial gravity
high gravity environments

human engineering
USE **human factors engineering**

human factors engineering
DEF Application of information on physical and psychological characteristics of man to the design of devices and systems for human use. Used for ergonomics and human engineering.
UF *ergonomics*
human engineering
RT∞ aeronautics
aircraft accidents
aircraft hazards
anthropometry
architecture
astronaut maneuvering equipment
astronaut performance
∞ astronautics
bioengineering
biofeedback
bionics
body measurement (biology)
brightness
color
comfort
cybernetics
education
efficiency
∞ engineering
environmental engineering
environments
fatigue (biology)
flat panel displays
∞ flight stress
glare
human resources
human-computer interface
illuminating
life support systems
man machine systems
manned space flight
manual control
monocular vision
noise (sound)
∞ performance
pilot error
production engineering
psychological effects
safety devices
safety management
systems engineering
teleoperators
visibility
vision
wheelchairs
workstations

human factors laboratories
GS laboratories

. human factors laboratories
RT environmental laboratories

human immunodeficiency virus
(added August 1991)
DEF A virus which attacks the human immune system and causes acquired immunodeficiency syndrome (AIDS).
UF *HIV (virus)*
GS microorganisms
. viruses
. . human immunodeficiency virus
RT acquired immunodeficiency syndrome
antibodies
immune systems
immunology
interferon
vaccines
viral diseases
virulence

human pathology
GS medical science
. pathology
. . human pathology
RT cholera
convulsions
epilepsy
patients

human performance
GS human performance
. astronaut performance
. . blackout prevention
. operator performance
. pilot performance
. . blackout prevention
RT abilities
competition
human resources
information processing (biology)
intelligence tests
intravehicular activity
mental health
mental performance
∞ performance
pilot error
psychomotor performance
race factors
sensorimotor performance
visual tasks
workloads (psychophysiology)

human reactions
RT biological effects
boredom
competition
emotional factors
laughing
noise pollution
physiological effects
psychological effects
psychomotor performance
∞ reaction
reaction time
reward (psychology)
sensorimotor performance
shock (physiology)
vacillation

human relations
UF *interpersonal relations*
RT employee relations
personnel management
sociology

human resources
DEF Those elements of support and capability that are provided by persons using their mental and physical capabilities.
RT education
human factors engineering
human performance
management planning
manpower
personnel
personnel development
personnel management

human tolerances
GS tolerances (physiology)
. human tolerances
RT∞ acceleration
acceleration tolerance
diving (underwater)
heat acclimatization
heat tolerance
noise pollution
noise tolerance
orthostatic tolerance
radiation tolerance
shock (physiology)

human wastes
GS wastes
. metabolic wastes
. . human wastes
. . . feces
. . . urine
RT activated sludge
air pollution
environment pollution
environmental surveys
excretion
liquid wastes
organic wastes (fuel conversion)
pollution
sewage
sewers
solid wastes
toilets
waste disposal

human–computer interface
UF *man–computer interface*
user–computer interface
GS interfaces
. human–computer interface
man machine systems
. human–computer interface
RT command languages
computer aided design
data processing terminals
display devices
document markup languages
graphical user interface
human factors engineering
hypertext
natural language processing
pilot support systems
query languages
user requirements
virtual reality

Humason comet
GS celestial bodies
. comets
. . Humason comet
RT solar system

humerus
RT arm (anatomy)
elbow (anatomy)

humidity
DEF The amount of water vapor in the air. Specifically, relative humidity.
RT air conditioning
atmospheric density
atmospheric moisture
body temperature
climatology
comfort
corrosion
dehumidification
drop size
dry heat
environments
hygral properties
hygrometers
lapse rate
meteorological parameters
meteorology
mixing ratios
moisture
moisture content
moisture meters
perspiration
precipitation (meteorology)
psychological effects
psychrometers
refrigerating
temperature
vapor pressure
water
water vapor
weather forecasting

humidity measurement
RT hygrometers
∞ measurement
meteorological instruments
moisture meters
psychrometers

Hummingbird aircraft
USE **XV-4 aircraft**

Hungarian space program
(added June 1989)
GS programs
. space programs
. . European space programs
. . . Hungarian space program
RT Hungary

Hungary
GS nations
. Hungary
RT Central Europe
Europe
Hungarian space program

Hunter F-2 aircraft
USE **F-2 aircraft**

Hunting H-126 aircraft
USE **H-126 aircraft**

Hunting P-84 aircraft
USE **jet provost aircraft**

hurricanes
DEF Tropical cyclones, especially in the West Indies, in which the wind velocity equals or exceeds 64 knots (73 mph).
GS storms
. storms (meteorology)
. . cyclones
. . . hurricanes
. . . . Anna hurricane
. . tropical storms
. . . hurricanes

. . . . Anna hurricane
RT climatology
cyclogenesis
meteorology
storm damage
storm surges
tornadoes
typhoons

HUS–1 helicopter
USE **UH–34 helicopter**

Huskie helicopter
USE **HH–43 helicopter**

Hustler aircraft
USE **B–58 aircraft**

Huygens principle
DEF A very general principle applying to all forms of wave motion which states that every point on the instantaneous position of an advancing phase front (wave front) may be regarded as a source of secondary spherical wavelets. The position of the phase front a moment later is then determined as the envelope of all the secondary wavelets (ad infinitum).
RT diffraction
∞ optics
point sources
refraction
scattering
Schelkunoff principle
spherical waves
wave fronts
wave propagation

Huygens probe
(added May 1997)
GS ESA spacecraft
. **Huygens probe**
unmanned spacecraft
. space probes
. . **Huygens probe**
RT Cassini mission
satellite atmospheres
Titan

Hvittis chondrite
GS celestial bodies
. meteorites
. . stony meteorites
. . . chondrites
. . . . **Hvittis chondrite**

hybrid circuits
GS circuits
. **hybrid circuits**
RT electronic packaging
printed circuits
semiconductor devices
transistor circuits

hybrid combustion
USE **hybrid propellant rocket engines**

hybrid composites
(added April 1992)
GS composite materials
. **hybrid composites**
RT fiber composites
hybrid structures
laminates
metal matrix composites
polymer matrix composites
reinforced plastics
reinforcing fibers
resin matrix composites
superhybrid materials

hybrid computers
GS data processing equipment
. computers
. . **hybrid computers**
RT analog computers
digital computers

hybrid navigation systems
GS navigation
. **hybrid navigation systems**
RT navigation aids
navigation instruments
∞ systems

hybrid propellant rocket engines
UF *hybrid combustion*
GS engines
. rocket engines
. . **hybrid propellant rocket engines**
. . . lithergol rocket engines
RT booster rocket engines
∞ hybrid rocket engines
internal combustion engines
jet engines
liquid propellant rocket engines
restartable rocket engines
solid propellant rocket engines
sustainer rocket engines
Vernier engines

hybrid propellants
UF *lithergolic propellants*
GS propellants
. **hybrid propellants**
RT case bonded propellants
chemical fuels
cryogenic rocket propellants
gaseous rocket propellants
gelled rocket propellants
high energy fuels
high energy propellants
hypergolic rocket propellants
liquid rocket propellants
metal fuels
metal propellants
solid propellant ignition
solid propellants
solid rocket propellants

hybrid propulsion
UF *dual mode propulsion*
GS propulsion
. chemical propulsion
. . **hybrid propulsion**
RT jet engines
laser propulsion
rocket engines

∞ **hybrid rocket engines**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ducted rocket engines
hybrid propellant rocket engines
liquid propellant rocket engines
lithergol rocket engines
solid propellant rocket engines
turboramjet engines

hybrid structures
DEF An assembly constructed of interconnected rigid and flexible structural shapes; designed to sustain dynamic, static, and other loads.
RT composite structures
elastic properties
flexible bodies
hybrid composites
rigid structures
structural stability
∞ structures

hybrids (biology)
USE **genetic engineering**

hydrates
RT aqueous solutions
water

hydration
DEF The formation of a compound by the combining of water with some other substance.
RT chemical reactions
dehydration
hydrolysis

hydraulic actuators
USE **actuators**
hydraulic equipment

hydraulic analogies
GS analogies
. **hydraulic analogies**
RT computerized simulation
flow visualization
fluerics
fluidics
gas flow
numerical flow visualization
wave propagation

hydraulic control
UF *electrohydraulic control*
RT automatic control
∞ control
electronic control
engine control
fluid power
fluidics
∞ hydraulics
pneumatic control
remote control
solenoid valves

hydraulic equipment
UF *hydraulic actuators*
hydraulic heating sources
hydraulic pumps
hydraulic systems
hydraulic valves
GS **hydraulic equipment**
. aircraft hydraulic systems
RT airborne equipment
automatic control valves
cocks
cushions
∞ equipment
fluid amplifiers
fluid power
fluid switching elements
fly by tube control
gates (openings)
∞ hydraulics
motors
network analysis
network synthesis
pumps
relief valves
servocontrol
servomechanisms
shock absorbers
∞ systems
turbine wheels
valves
water hammer
wheel brakes

hydraulic fluids
DEF Liquids used in hydraulic systems for transmitting power.
GS liquids
. **hydraulic fluids**
. . Skydrol (trademark)
RT fluid pressure
fluid transmission lines
∞ fluids
high temperature fluids
∞ hydraulics
oils
patch tests
transmission fluids
working fluids

hydraulic heating sources
USE **heat sources**
hydraulic equipment

hydraulic jets
UF *water jets*
GS fluid jets
. **hydraulic jets**
RT jet flow

hydraulic pumps
USE **hydraulic equipment**
pumps

hydraulic shock
GS mechanical shock
. **hydraulic shock**

hydraulic systems
USE **hydraulic equipment**

hydraulic test tunnels
UF *water tunnels*
GS test facilities
. **hydraulic test tunnels**
RT ∞ tunnels

hydraulic valves
USE **hydraulic equipment**
valves

∞ **hydraulics**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT fluid dynamics
fluid flow
fluid mechanics
fluid power
hydraulic control
hydraulic equipment
hydraulic fluids
hydrodynamic ram effect
hydrodynamics
hydrology
hydromechanics
hydrostatics
impedance
influence coefficient
limnology
∞ mechanics (physics)
pipes (tubes)
pneumatics
pressure heads
thermohydraulics
water
water flow
water pressure

hydrazides
RT hydrazines

hydrazine borane
GS boron compounds
. boron hydrides
. . **boranes**
. . . **hydrazine borane**
hydrazines
. **hydrazine borane**
hydrogen compounds
. hydrides
. . boron hydrides
. . . boranes
. . . . **hydrazine borane**

hydrazine engines
UF *NIMPHE (engine)*
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **hydrazine engines**
RT turborocket engines

hydrazine nitrate
GS nitrogen compounds
. nitrates
. . inorganic nitrates
. . . **hydrazine nitrate**

hydrazine nitroform
GS esters
. organic nitrates
. . nitroforms
. . . **hydrazine nitroform**
explosives
. **hydrazine nitroform**
nitrogen compounds
. nitrates
. . organic nitrates
. . . nitroforms
. . . . **hydrazine nitroform**
propellants
. **hydrazine nitroform**

hydrazine perchlorates
GS halogen compounds
. chlorine compounds
. . perchlorates
. . . **hydrazine perchlorates**
hydrazines
. **hydrazine perchlorates**

hydrazines
GS **hydrazines**
. chlorpromazine
. dihydrazine
. dimethylhydrazines
. ethylene dihydrazine
. hydrazine borane
. hydrazine perchlorates
. methylhydrazine
. tetrafluorohydrazine
RT aerozine
amines
hydrazides
hydrazones
liquid rocket propellants
rocket propellants

hydrazinium compounds
GS nitrogen compounds
. **hydrazinium compounds**
RT ∞ chemical compounds

hydrazoic acid
GS acids
. **hydrazoic acid**
nitrogen compounds
. **hydrazoic acid**
RT nitrogen hydrides

hydrazones
GS nitrogen compounds
. **hydrazones**
RT hydrazines

hydrazonium compounds
RT ∞ chemical compounds

hydrides
GS hydrogen compounds
. **hydrides**
. . borohydrides
. . . aluminum borohydrides
. . . beryllium borohydrides
. . boron hydrides
. . . aluminum borohydrides
. . . beryllium borohydrides
. . . boranes
. . . . carborane
. . . . hydrazine borane
. . . . pentaboranes
. . diborane
. . dihydrides
. . metal hydrides
. . . aluminum hydrides
. . . . aluminum borohydrides
. . . beryllium hydrides
. . . cesium hydrides
. . . lithium hydrides
. . . . lithium aluminum hydrides
. . . potassium hydrides
. . . sodium hydrides
. . nitrogen hydrides
. . . amino radical
. . phosphines
. . silanes
. . . chlorosilanes
. . . methyl chlorosilanes
. . zirconium hydrides
RT deuterides
hydrogen production

hydroacoustics
USE **underwater acoustics**

hydroaeromechanics
USE **aerodynamics**

hydroballistics
GS ballistics
. **hydroballistics**
RT ballistic ranges
hydrodynamics
torpedoes
underwater explosions
underwater trajectories

hydrobarophones
USE **hydrophones**

hydroboration
GS chemical reactions
. **hydroboration**

hydrobromic acid
GS acids
. **hydrobromic acid**
halogen compounds
. bromine compounds
. . bromides
. . . **hydrobromic acid**
. halides
. . bromides
. . . **hydrobromic acid**

hydrobromides
GS halogen compounds
. bromine compounds
. . bromides
. . . **hydrobromides**
. halides

. . bromides
. . . **hydrobromides**
hydrogen compounds
. **hydrobromides**

hydrocarbon combustion
GS combustion
. **hydrocarbon combustion**
RT explosions
fuel combustion
oxidation
propellant combustion
smog

hydrocarbon fuel production
GS fuel production
. **hydrocarbon fuel production**
RT agriculture
bioconversion
biomass energy production
energy technology
hydrogen fuels
lignite
solvent refined coal
waste utilization

hydrocarbon fuels
GS fuels
. chemical fuels
. **hydrocarbon fuels**
. . diesel fuels
. . fossil fuels
. . . coal
. . . . anthracite
. . . . lignite
. . . . solvent refined coal
. . . crude oil
. . . natural gas
. . . . liquefied natural gas
. . peat
. . gasoline
. . jet engine fuels
. . . JP-4 jet fuel
. . . JP-5 jet fuel
. . . JP-6 jet fuel
. . . JP-7 jet fuel
. . . JP-8 jet fuel
. . synthane
RT acetylene
aircraft fuels
alkanes
amines
automobile fuels
butadiene
clean fuels
coal gasification
coal liquefaction
coal utilization
endothermic fuels
energy policy
environmental chemistry
ethane
ethylene
fuel production
heptanes
hexenes
high energy fuels
hydrogen fuels
hydrogen-based energy
hypergolic rocket propellants
kerogen
kerosene
methanation
methane
paraffins
propane
retort processing
rocket propellants
shale oil
storable propellants
synthetic fuels

hydrocarbon poisoning
GS diseases
. toxic diseases
. . **hydrocarbon poisoning**
toxicity
. **hydrocarbon poisoning**
RT benzene poisoning
industrial safety
∞ poisoning
smog
toxicity and safety hazard
toxicology

hydrocarbons
GS organic compounds
. **hydrocarbons**
. . aliphatic hydrocarbons
. . . alkanes
. . . . butanes
. . . . cetane
. . . . ethane
. . . . heptanes
. . . . methane
. . . . nitropropane
. . . . nonanes
. . . . octanes
. . . . paraffins
. . . . . ceresin
. . . . pentanes
. . . . . neopentane
. . . . propane
. . . alkenes
. . . . butenes
. . . . ethylene
. . . . . vinylidene
. . . . hexenes
. . . . propylene
. . . . trienes
. . . alkynes
. . . . acetylene
. . . . oxyacetylene
. . . dienes
. . . . butadiene
. . . . heptadiene
. . . . hexadiene
. . . . polybutadiene
. . carotene
. . cubane
. . cyanoacetylene
. . cyclic hydrocarbons
. . . anthracene
. . . benzene
. . . chlorobenzenes
. . . colchicine
. . . cyclobutane
. . . cyclohexane
. . . cyclopropane
. . . durene
. . . indene
. . . menthol
. . . naphthalene
. . . naphthenes
. . . polycyclic aromatic hydrocarbons
. . diphenyl compounds
. . . diphenyl hydantoin
. . fluorohydrocarbons
. . . carbon tetrafluoride
. . . chlorofluoromethane
. . . polytetrafluoroethylene
. . . . teflon (trademark)
. . mesitylene
. . methylene
. . methylidyne
. . natural gas
. . . liquefied natural gas
. . phenanthrene
. . pyrenes
. . quinoxalines
. . stilbene
. . toluene
. . triphenyls
. . xylene
RT ∞ aromatic compounds
carbon compounds
cracking (chemical engineering)
organic peroxides

hydrochloric acid
GS acids
. **hydrochloric acid**
halogen compounds
. chlorine compounds
. . chlorides
. . . hydrogen chlorides
. . . . **hydrochloric acid**
. halides
. . chlorides
. . . hydrogen chlorides
. . . . **hydrochloric acid**

hydrochlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . **hydrochlorides**
. halides
. . chlorides
. . . **hydrochlorides**
RT hydrogen chlorides

hydroclimatology
DEF The study of the physical and often the chemical factors that characterize a particular environment.
GS climatology
. **hydroclimatology**
RT agroclimatology
hydrography
hydrology
meteorology
oceanography

hydrocracking
DEF Technique for the catalytic conversion of coal into liquid fuels.
GS chemical reactions
. cracking (chemical engineering)
. . **hydrocracking**
. hydrogenolysis
. . **hydrocracking**
decomposition
. cracking (chemical engineering)
. . **hydrocracking**
. hydrogenolysis
. . **hydrocracking**
fractionation
. **hydrocracking**
RT coal gasification
coal liquefaction

hydrocyanic acid
UF *hydrogen cyanides*
prussic acid
GS acids
. **hydrocyanic acid**
hydrogen compounds
. **hydrocyanic acid**
nitrogen compounds
. **hydrocyanic acid**
RT CN emission

HCN lasers

hydrodynamic coefficients
DEF The factors producing motions in floating objects in liquids.
GS coefficients
. **hydrodynamic coefficients**
RT computational fluid dynamics
∞ drag coefficients
flow distribution
flow velocity
liquid flow
sea roughness
ship hulls
steady flow
unsteady flow
water waves

hydrodynamic equations
GS equations of motion
. kinetic equations
. . **hydrodynamic equations**
. . . Burnett equations
. . . Helmholtz vorticity equation
RT Boltzmann transport equation
∞ equations
flow stability
flow theory
fluid mechanics
gas dynamics
hydrodynamics
meteorology
plasma dynamics

hydrodynamic ram effect
DEF The physical effect (force) transmitted to the walls of a liquid filled container by the action of a projectile penetrating the container and transferring its energy to the liquid as kinetic energy. The fluid, in turn, transfers this kinetic energy to the walls of the container, causing excessive structural damage.
UF *ram effect (hydrodynamics)*
RT ∞ effects
fluid filled shells
∞ hydraulics
hypervelocity impact
impact
kinetic energy
liquid filled shells
momentum transfer
penetration

hydrodynamic stability
USE **flow stability**

hydrodynamic tunnels
USE **plasma jet wind tunnels**

hydrodynamics
GS fluid mechanics
. fluid dynamics
. . **hydrodynamics**
. . . elastohydrodynamics
. . . electrohydrodynamics
. . . magnetohydrodynamics
. hydromechanics
. . **hydrodynamics**
. . . elastohydrodynamics
. . . electrohydrodynamics
. . . magnetohydrodynamics
RT ballast (mass)
∞ dynamics
Earth sciences
Euler equations of motion
flow theory
fluid flow
fluid power
gas dynamics
∞ hydraulics
hydroballistics
hydrodynamic equations
hydrostatics
internal flow
Krook equation
Lagrange coordinates
∞ mechanics (physics)
ocean dynamics
pressure gradients
pressure heads
seepage
ship hulls
thermohydraulics
water
water flow
water hammer
water pressure

hydroelasticity
GS mechanical properties
. elastic properties
. . **hydroelasticity**
RT compressibility
compressible fluids
modulus of elasticity
thermoelasticity
viscoelasticity

hydroelectric power stations
UF *hydropower stations*
GS stations
. **hydroelectric power stations**
RT electric power plants
electric power transmission
hydroelectricity
∞ power plants
∞ power transmission
turbogenerators
water wheels

hydroelectricity
DEF Electric power produced by water power using water wheels, turbogenerators, or other conversion equipment.
GS electricity
. **hydroelectricity**
RT dams
electric current
∞ electric power
hydroelectric power stations
∞ power plants
turbogenerators

hydrofluoric acid
UF *hydrogen fluorides*
GS acids
. **hydrofluoric acid**
halogen compounds
. fluorine compounds
. . fluorides
. . . **hydrofluoric acid**
. halides
. . fluorides
. . . **hydrofluoric acid**

hydrofoil boats
USE **hydrofoil craft**

hydrofoil craft
UF *hydrofoil boats*
RT captured air bubble vehicles
hydrofoils
hydroplanes (vehicles)
ships

hydrofoil oscillations
GS oscillations
. **hydrofoil oscillations**
RT flow stability
flutter
hydrofoils
supercavitating flow

hydrofoils
GS **hydrofoils**
. **keels**
RT airfoils
∞ blades
elevators (control surfaces)
fins
∞ foils
foils (materials)
guide vanes
hulls (structures)
hydrofoil craft
hydrofoil oscillations
hydroplanes (surfaces)
hydroplaning
landing gear
marine rudders
ships
skis
streamlining
tail assemblies

hydroforming
GS metal working
. **hydroforming**
RT dehydrogenation

hydrogen
GS chemical elements
. **hydrogen**
. . hydrogen isotopes
. . . deuterium
. . . hydrogen 4
. . . metallic hydrogen
. . . tritium
. . liquid hydrogen
gases
. **hydrogen**
. . hydrogen isotopes
. . . deuterium
. . . hydrogen 4
. . . metallic hydrogen
. . . tritium
. . liquid hydrogen
RT Balmer series
deuterium plasma
fuels
hydrogen atoms
hydrogen ions
hydrogen plasma
hydrogenation
hydrogenolysis
hydronium ions
metallicity
Neptune atmosphere
ortho hydrogen
para hydrogen
Paschen series
Rydberg series
synthane
Uranus atmosphere

hydrogen 2
USE **deuterium**

hydrogen 3
USE **tritium**

hydrogen 4
GS chemical elements

. hydrogen
. . hydrogen isotopes
. . . **hydrogen 4**
. nuclides
. . isotopes
. . . hydrogen isotopes
. . . . **hydrogen 4**
gases
. hydrogen
. . hydrogen isotopes
. . . **hydrogen 4**

hydrogen air fuel cells
USE **hydrogen oxygen fuel cells**

hydrogen atoms
GS atoms
. **hydrogen atoms**
RT H I regions
hydrogen

hydrogen azides
GS explosives
. **hydrogen azides**
nitrogen compounds
. azides (inorganic)
. . **hydrogen azides**
propellants
. **hydrogen azides**

hydrogen bombs
USE **fusion weapons**

hydrogen bonds
GS chemical bonds
. **hydrogen bonds**
RT molecular structure
water

hydrogen chloride lasers
USE **HCL lasers**

hydrogen chlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . **hydrogen chlorides**
. . . . hydrochloric acid
. halides
. . chlorides
. . . **hydrogen chlorides**
. . . . hydrochloric acid
RT hydrochlorides

hydrogen clouds
GS **hydrogen clouds**
. H I regions
. H II regions
. Orion nebula
RT ∞ clouds
drop size
galactic rotation
gases
molecular clouds
neutral gases
plasma clouds
spin temperature
star formation
vapor phases
vapors

hydrogen compounds
GS **hydrogen compounds**
. deuterium compounds
. . deuterides
. . deuterium fluorides
. . heavy water
. hydrides
. . borohydrides
. . . aluminum borohydrides
. . . beryllium borohydrides
. . boron hydrides
. . . aluminum borohydrides
. . . beryllium borohydrides
. . . boranes
. . . . carborane
. . . . hydrazine borane
. . . . pentaboranes
. . diborane
. . dihydrides
. . metal hydrides
. . . aluminum hydrides
. . . . aluminum borohydrides
. . . beryllium hydrides
. . . cesium hydrides
. . . lithium hydrides
. . . . lithium aluminum hydrides
. . . potassium hydrides
. . . sodium hydrides
. . nitrogen hydrides
. . . amino radical
. . phosphines
. . silanes
. . . chlorosilanes
. . . methyl chlorosilanes
. . zirconium hydrides
. hydrobromides
. hydrocyanic acid
. hydrogen peroxide
. hydrogen sulfide
. hydrosulfites
. light water
RT acids
∞ chemical compounds
water

hydrogen cyanide lasers
USE **HCN lasers**

hydrogen cyanides
USE **hydrocyanic acid**

hydrogen deuterium oxide
USE **heavy water**

hydrogen embrittlement
DEF A decrease in fracture strength of metals due to the incorporation of hydrogen in the metal lattice.
GS embrittlement
. **hydrogen embrittlement**
RT chemisorption
gas–metal interactions
iron
steels

hydrogen engines
DEF Internal combustion engines utilizing gaseous hydrogen as the fuel.
GS **engines**
. air breathing engines
. . gas turbine engines
. . . **hydrogen engines**
. internal combustion engines
. . gas turbine engines
. . . **hydrogen engines**
. turbine engines
. . gas turbine engines
. . . **hydrogen engines**
RT aircraft engines
automobiles

hydrogen fluoride lasers
USE **HF lasers**

hydrogen fluorides
USE **hydrofluoric acid**

hydrogen fuels
GS fuels
. chemical fuels
. . liquid fuels
. . . **hydrogen fuels**
RT cryogenic rocket propellants
deuterium
fuel cells
fuel production
gaseous rocket propellants
gelled propellants
hydrocarbon fuel production
hydrocarbon fuels
hydrogen–based energy
liquid hydrogen
liquid rocket propellants
ramjet engines
slush hydrogen
water splitting

hydrogen ions
GS ions
. **hydrogen ions**
RT acidity
H II regions
hydrogen
hydronium ions
pH
pH factor
positive ions
protons

hydrogen isotopes
GS chemical elements
. hydrogen
. . **hydrogen isotopes**
. . . deuterium
. . . hydrogen 4
. . . metallic hydrogen
. . . tritium
. nuclides
. . isotopes
. . . **hydrogen isotopes**
. . . . deuterium
. . . . hydrogen 4
. . . . metallic hydrogen
. . . . tritium
gases
. hydrogen
. . **hydrogen isotopes**
. . . deuterium
. . . hydrogen 4
. . . metallic hydrogen
. . . tritium

hydrogen masers
DEF A stimulated emission device in which hydrogen gas provides an output signal with a high degree of stability and spectral purity.
GS stimulated emission devices
. masers
. . gas masers
. . . **hydrogen masers**

hydrogen metabolism
DEF The physical and chemical processes by which an organism transforms the complex hydrogen components of foodstuffs into simple hydrogen compounds by disassimilation and catabolism in the production of energy.
GS metabolism
. **hydrogen metabolism**
RT carbohydrate metabolism
nitrogen metabolism
oxygen metabolism
respiration
secretions

hydrogen oxygen engines
DEF Engines using liquid hydrogen as fuel and liquid oxygen as oxidizer. Used for hydrox engines and lox–hydrogen engines.
UF *hydrox engines*
LOX–hydrogen engines
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **hydrogen oxygen engines**
. . . . J–2 engine
. . . . M–1 engine
. . . . RL–10–A–1 engine
. . . . RL–10–A–3 engine
RT auxiliary propulsion
liquid air cycle engines
space station propulsion
turborocket engines

hydrogen oxygen fuel cells
UF *hydrogen air fuel cells*
GS electric generators
. direct power generators
. . fuel cells
. . . **hydrogen oxygen fuel cells**
electrochemical cells
. fuel cells
. . **hydrogen oxygen fuel cells**
RT phosphoric acid fuel cells

hydrogen perchlorate
GS halogen compounds
. chlorine compounds
. . perchlorates
. . . **hydrogen perchlorate**

hydrogen peroxide
GS chalcogenides
. oxides
. . anhydrides
. . . peroxides
. . . . inorganic peroxides
. . . . . **hydrogen peroxide**
. . dioxides
. . . **hydrogen peroxide**
hydrogen compounds
. **hydrogen peroxide**
RT rocket oxidizers

hydrogen plasma
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **hydrogen plasma**
. . . . . deuterium plasma
. corpuscular radiation
. . energetic particles
. . . **plasmas (physics)**
. . . . **hydrogen plasma**
. . . . . deuterium plasma
RT argon plasma
deuterium
helium plasma
hydrogen
oxygen plasma
solar wind
Stark effect

hydrogen production
DEF Production of hydrogen for fuel purposes by photosynthetic, chemical, electrical, thermal, electrochemical, or other means.
RT electrolysis
energy conversion
fuels
hydrides
hydrogen–based energy
hydrolysis
lignite
solar energy conversion
thermal dissociation
water splitting

hydrogen recombinations
GS recombination reactions
. **hydrogen recombinations**

hydrogen sulfide
GS chalcogenides
. sulfides
. . inorganic sulfides
. . . **hydrogen sulfide**
hydrogen compounds
. **hydrogen sulfide**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **hydrogen sulfide**

hydrogen–based energy
RT ∞ energy
energy technology
fuel cells
gas mixtures
hydrocarbon fuels
hydrogen fuels
hydrogen production
liquid hydrogen
nickel hydrogen batteries

hydrogenation
GS chemical reactions
. reduction (chemistry)
. . **hydrogenation**
RT asphaltenes
cyclohexane
dehydrogenation
hydrogen
refining

hydrogenolysis
GS chemical reactions
. **hydrogenolysis**
. . hydrocracking
decomposition
. **hydrogenolysis**
. . hydrocracking
RT cracking (chemical engineering)
dehydrogenation
hydrogen
∞ reduction

hydrogenomonas
GS autotrophs
. **hydrogenomonas**
microorganisms
. bacteria
. . **hydrogenomonas**

hydrogeology
DEF The science that deals with subsurface waters and with related geologic aspects of surface waters. The term is also used in the more restrictive sense of ground water geology.
GS geology
. **hydrogeology**
hydrology
. **hydrogeology**
RT aquifers
core sampling
erosion
flood plains
flood predictions
geysers
glaciology
hydrology models
hydrostatics
∞ science
soil erosion
stratigraphy
watersheds

hydrography
DEF The science that deals with the physical aspects of all waters on the Earth's surface, especially the compilation of navigational charts.
RT geophysics
hydroclimatology
hydrology
hydrometeorology
ice mapping
limnology
meteorology
ocean currents
ocean surface
oceanography

hydrokinetics
USE **hydromechanics**

hydrological cycle
UF ***water cycle (hydrology)***
GS cycles
. **hydrological cycle**
RT air water interactions
Earth hydrosphere
evaporation
hydrology
hydrology models
hydrometeorology
precipitation (meteorology)

hydrology
(added February 1991)
DEF The science that deals with global water (both liquid and solid), its properties, circulation, and distribution, on and under the Earth's surface and in the atmosphere through evapotranspiration or is discharged into oceans. In recent years, the scope of hydrology has been expanded to include environmental and economic aspects.
UF *hydroscience*
GS **hydrology**
. hydrogeology
RT alluvium
aquifers
climatology
drainage
drainage patterns
drought
Earth hydrosphere
Earth planetary structure
Earth sciences
flood control
flood damage
flood plains
flood predictions
floods
geochemistry
geophysics
Great Salt Lake (UT)
∞ hydraulics
hydroclimatology
hydrography
hydrological cycle
hydrometeorology
hydrometeors
ice mapping
International Hydrological Decade
Lake Erie
Lake Huron
Lake Michigan

Lake Ontario
Lake Superior
limnology
marine chemistry
meteorology
oceanography
polar meteorology
precipitation (meteorology)
rain
streams
structural properties (geology)
water
water management
water resources
watersheds

hydrology models
DEF Mathematical or physical representations by which the circulation, distribution, and properties of the waters of the Earth can be studied.
GS models
. **hydrology models**
RT climate models
drainage
floods
hydrogeology
hydrological cycle
precipitation (meteorology)
rain
streams
water flow

hydrolysis
GS chemical reactions
. **hydrolysis**
RT ammonolysis
cracking (chemical engineering)
extraction
hydration
hydrogen production

hydromagnetic flow
USE **magnetohydrodynamic flow**

hydromagnetic stability
USE **magnetohydrodynamic stability**

hydromagnetic waves
USE **magnetohydrodynamic waves**

hydromagnetics
USE **magnetohydrodynamics**

hydromagnetism
USE **magnetohydrodynamics**

hydromechanics
UF *hydrokinetics*
GS fluid mechanics
. **hydromechanics**
.. hydrodynamics
... **elastohydrodynamics**
... **electrohydrodynamics**
... magnetohydrodynamics
.. hydrostatics
... **magnetohydrostatics**
RT fluid dynamics
fluid flow
∞ hydraulics
kinetics
∞ science
water

hydrometallurgy
RT chlorination
electrodialysis
filtration
ion exchanging
leaching
∞ metallurgy
∞ precipitation
precipitation (chemistry)
refining
sulfation

hydrometeorology
GS meteorology
. **hydrometeorology**
.. marine meteorology
RT agrometeorology
hydrography
hydrological cycle
hydrology
precipitation (meteorology)
water balance

hydrometeors
(added March 1995)
DEF A minute droplet of water or crystal of ice falling through or suspended in the atmosphere.
GS condensates
. **hydrometeors**
RT atmospheric moisture
dew
drops (liquids)
fog
hydrology
ice nuclei
precipitation (meteorology)

hydrometers
DEF Instruments used for measuring the specific gravity of a liquid.
GS measuring instruments
. **hydrometers**
RT chemical analysis
density (mass/volume)
density measurement
weight measurement

hydronium ions
GS ions
. molecular ions
.. **hydronium ions**
. positive ions
.. **hydronium ions**
RT hydrogen
hydrogen ions

hydrophones
DEF Microphones suitable for use in water or other liquid. Used for hydrobarophones.
UF *hydrobarophones*
GS transducers
. sound transducers
.. **electroacoustic transducers**
... **hydrophones**
RT microphones
sonar
sonobuoys

hydroplanes (surfaces)
UF *hydroskis*
RT hydrofoils
hydroplaning
skis
∞ systems

hydroplanes (vehicles)
RT hydrofoil craft
hydroplaning
∞ vehicles

hydroplaning
RT hydrofoils
hydroplanes (surfaces)
hydroplanes (vehicles)
skid landings
skidding
water landing

hydroponics
DEF Growing of plants in a nutrient with the mechanical support of an inert medium such as sand.
RT agriculture
aquatic plants
aquiculture
plants (botany)
vegetation growth

hydropower stations
USE **hydroelectric power stations**

hydropyrolysis
DEF A coal-to-liquid process in which bituminous coal, lignite, tars, sand and related materials are rapidly heated to 1000–1100 degrees K in pressurized hydrogen gasification reactors to generate pure methane.
GS gasification
. coal gasification
.. **hydropyrolysis**
RT coal
coal liquefaction
lignite
methanation
methane

hydroscience
USE **hydrology**

hydroskis
USE **hydroplanes (surfaces)**

hydrosphere (Earth)
USE **Earth hydrosphere**

hydrospinning
GS forming techniques
. metal spinning
.. **hydrospinning**
metal working
. metal spinning
.. **hydrospinning**
spin
. metal spinning
.. **hydrospinning**

hydrostatic pressure
DEF A state of stress in which all the principal stresses are equal (and there is no shear stress).
GS pressure
. static pressure
.. **hydrostatic pressure**
RT center of pressure
elevation
head (fluid mechanics)
hydrostatics
isostatic pressure
pressure dependence
pressure heads
transition pressure
water pressure

hydrostatics
GS fluid mechanics
. hydromechanics
.. **hydrostatics**
... **magnetohydrostatics**
statics
. **hydrostatics**
.. magnetohydrostatics
RT aerostatics
elevation

head (fluid mechanics)
∞ hydraulics
hydrodynamics
hydrogeology
hydrostatic pressure
isostasy
pressure gradients
pressure heads
water
water pressure

hydrosulfites
GS hydrogen compounds
. **hydrosulfites**
sulfur compounds
. sulfites
. . **hydrosulfites**

hydrothermal crystal growth
GS growth
. crystal growth
. . **hydrothermal crystal growth**
RT electroepitaxy

hydrothermal stress analysis
DEF The evaluation of the combined effects of temperature–humidity cycling.
RT hydrothermal systems
hygral properties
hygroscopicity
moisture content
moisture resistance

hydrothermal systems
DEF Energy systems utilizing hot water from geysers, hot springs, solar heating, and other sources.
RT aquifers
energy conversion
geothermal resources
geysers
heating
hydrothermal stress analysis
solar heating
∞ systems

hydrox engines
USE **hydrogen oxygen engines**

hydroxides
GS **hydroxides**
. lithium hydroxides
. potassium hydroxides
. sodium hydroxides
RT alkalies

hydroxycorticosteroid
GS organic compounds
. lipids
. . steroids
. . . corticosteroids
. . . . **hydroxycorticosteroid**
. . . . . cortisone
secretions
. endocrine secretions
. . hormones
. . . corticosteroids
. . . . **hydroxycorticosteroid**
. . . . . cortisone
RT adrenal metabolism

hydroxyl compounds
GS **hydroxyl compounds**
. alcohols
. . ethyl alcohol
. . glycols
. . isopropyl alcohol
. . methyl alcohol
. . phenols
. . . bisphenols
. . . cresols
. . . phloroglucinol
. . . thymol
. . polyvinyl alcohol
. . triols
. . . cyanuric acid
RT ∞ chemical compounds
organic compounds

hydroxyl emission
GS electromagnetic radiation
. radio waves
. . radio emission
. . . **hydroxyl emission**
emission
. radio emission
. . **hydroxyl emission**
RT emission spectra
radio sources (astronomy)

hydroxyl radicals
GS radicals
. free radicals
. . **hydroxyl radicals**
RT alcohols
∞ chemistry
formyl ions
glycols
ions

hydroxylamine sulfate
GS amines
. **hydroxylamine sulfate**
sulfur compounds
. sulfates
. . **hydroxylamine sulfate**

hydroxylammonium perchlorates
GS ammonium compounds
. **hydroxylammonium perchlorates**
halogen compounds
. chlorine compounds
. . perchlorates
. . . **hydroxylammonium perchlorates**

hygiene
GS **hygiene**
. oral hygiene
RT bathing
cleanliness
consumables (spacecrew supplies)
health
housekeeping (spacecraft)
public health
sanitation

hygral properties
DEF The affinity of something for moisture.
RT humidity
hydrothermal stress analysis
moisture
porosity
∞ properties

hygrometers
DEF Instruments for measuring the humidity of the atmosphere.
GS measuring instruments
. moisture meters
. . **hygrometers**
. . . psychrometers
RT chemical analysis
dew point
humidity
humidity measurement
meteorological instruments

hygroscopicity
RT chemical properties
hydrothermal stress analysis
material absorption
moisture content
moisture resistance
∞ physical properties
solubility
wettability

Hyla-Star rocket vehicle
GS launch vehicles
. **Hyla-Star rocket vehicle**
rocket vehicles
. single stage rocket vehicles
. . **Hyla-Star rocket vehicle**
RT liquid propellant rocket engines
Titan 2 ICBM

Hyllerass coordinates
GS coordinates
. **Hyllerass coordinates**
RT quantum mechanics
two body problem

hyoscine
UF *scopolamine*
GS amines
. **hyoscine**
bases (chemical)
. alkaloids
. . **hyoscine**
epoxy compounds
. **hyoscine**
nitrogen compounds
. alkaloids
. . **hyoscine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . alkaloids
. . . . **hyoscine**

hyperbaric chambers
DEF Chambers used to induce a decrease in ambient pressure as would occur in ascending to altitude. This type of chamber is primarily used for training and experimental purposes. It is also called an altitude chamber or a decompression chamber.
GS compartments
. test chambers
. . pressure chambers
. . . **hyperbaric chambers**
RT ∞ chambers
high pressure
vacuum chambers

hyperbolas
DEF Open curves with two branches, all points of which have a constant difference in distance from two fixed points called focuses.
GS geometry
. Euclidean geometry
. . analytic geometry
. . . conics
. . . . **hyperbolas**
RT hyperbolic trajectories

hyperbolic coordinates
UF *hyperbolic space*
GS coordinates
. **hyperbolic coordinates**

hyperbolic differential equations
GS analysis (mathematics)
. real variables
. . differential equations

. . . **hyperbolic differential equations**
RT Dirichlet problem
∞ equations
essentially non-oscillatory schemes
wave equations

hyperbolic functions
GS analysis (mathematics)
. complex variables
. . **hyperbolic functions**
. real variables
. . **hyperbolic functions**
functions (mathematics)
. **hyperbolic functions**
RT exponential functions
∞ hyperbolic systems
method of characteristics
orthogonal functions
Riemann waves
Riesz theorem

hyperbolic navigation
DEF Radio navigation in which a hyperbolic line of position is established by signals received from two stations at a constant time difference.
GS navigation
. radio navigation
. . **hyperbolic navigation**
. . . Decca navigation
. . . LORAC navigation system
. . . loran
. . . . loran C
. . . . loran D
. . . Shoran
RT air navigation
∞ hyperbolic systems
inertial navigation
surface navigation

hyperbolic reentry
GS atmospheric entry
. reentry
. . **hyperbolic reentry**
RT reentry trajectories

hyperbolic space
USE **hyperbolic coordinates**

∞ **hyperbolic systems**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT hyperbolic functions
hyperbolic navigation
∞ systems

hyperbolic trajectories
GS trajectories
. **hyperbolic trajectories**
RT celestial mechanics
escape velocity
hyperbolas
spacecraft trajectories

hypercapnia
GS carbon dioxide tension
. **hypercapnia**
RT blood
∞ breathing
respiratory rate
respiratory system

hypercube multiprocessors
DEF Distributed-memory, message-passing multiprocessors designed to reduce the number of interconnections compared to the number of processors. Other simple geometries such as rings, meshes, or trees of processors can be embedded in hypercubes.
GS data processing equipment
. computers
. . hy**percube multiprocessors**
RT architecture (computers)
interprocessor communication
multiprocessing (computers)
parallel computers
parallel processing (computers)
sorting algorithms
supercomputers

hyperfine structure
RT atomic structure
fine structure
line spectra
muon spin rotation
spectrum analysis
∞ structures

hypergeometric functions
UF *Jacobi polynomials*
GS analysis (mathematics)
. complex variables
. . **hypergeometric functions**
functions (mathematics)
. **hypergeometric functions**
RT Bessel functions
geometry
hyperspaces

hypergeometry
USE **hyperspaces**

hyperglycemia
GS metabolism
. carbohydrate metabolism
. . **hyperglycemia**

hypergolic rocket propellants
GS propellants
. rocket propellants
. . liquid rocket propellants
. . . **hypergolic rocket propellants**
RT cryogenic rocket propellants
gelled rocket propellants
hybrid propellants
hydrocarbon fuels
pyrophoric materials
solid propellant ignition
spontaneous combustion
storable propellants

Hyperion
DEF One of the natural satellites of Saturn orbiting at a mean distance of 1,481,000 kilometers.
GS celestial bodies
. natural **satellites**
. . icy **satellites**
. . . **Hyperion**
. . Saturn **satellites**
. . . **Hyperion**
RT Saturn (planet)

hyperkinesis
DEF Excessive exercise, that is often accompanied by uncontrollable muscular movement.
GS physical exercise
. **hyperkinesis**
RT exhaustion
fatigue (biology)
hypokinesia
stress (physiology)
work capacity

hypermedia
USE **multimedia**

hypermnesia
RT mental performance

hypernuclei
GS particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **hypernuclei**
. corpuscular radiation
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **hypernuclei**
RT elementary particles
radioactive decay

hyperons
DEF In the classification of subatomic particles according to mass, the heaviest of such particles. Some large and highly unstable components of cosmic rays are hyperons.
GS particles
. elementary particles
. . bosons
. . . mesons
. . . . **hyperons**
. . . . . xi hyperons
. . fermions
. . . baryons
. . . . **hyperons**
. . . . . xi hyperons
. . hadrons
. . . baryons
. . . . **hyperons**
. . . . . xi hyperons
. . . mesons
. . . . **hyperons**
. . . . . xi hyperons
. nuclear particles
. . bosons
. . . mesons
. . . . **hyperons**
. . . . . xi hyperons
RT antiparticles
baryon resonance
charged particles
meson resonance
nucleons
strangeness

hyperopia
GS acuity
. visual acuity
. . **hyperopia**
defects
. **hyperopia**
RT **eye diseases**
vision

hyperoxia
DEF A condition in which the total oxygen content of the body is increased above that normally existing at sea level. Used for oxygen toxicity.
UF *oxygen toxicity*
RT hyperventilation
oximetry
oxygen consumption
toxic diseases
toxicity

hyperplanes
GS analysis (mathematics)
. real variables

. . hyperplanes
RT hyperspaces
polytopes
set theory

hyperpnea
RT ∞ breathing
respiratory rate

hypersomnia
GS sleep
. hypersomnia

hypersonic aircraft
GS hypersonic vehicles
. hypersonic aircraft
. . hypersonic gliders
. . . X-20 aircraft
RT aerospace planes
∞ aircraft
boostglide vehicles
hypersonics
jet aircraft
∞ low wing aircraft
research aircraft
supersonic aircraft
sweptback tail surfaces
sweptback wings
trapezoidal tail surfaces

hypersonic boundary layer
GS boundary layers
. hypersonic boundary layer
RT laminar boundary layer
thermal boundary layer
turbulent boundary layer

hypersonic combustion
GS combustion
. hypersonic combustion
RT erosive burning
fuel combustion

hypersonic flight
RT aerodynamics
∞ flight
hypersonics
missiles
rocket flight
supersonic flight
waveriders

hypersonic flow
DEF In aerodynamics, flow of a fluid over a body at speeds much greater than the speed of sound and in which the shock waves start at a finite distance from the surface of the body.
GS fluid flow
. hypersonic flow
RT aerodynamics
Burnett equations
cascade wind tunnels
compressible flow
flow velocity
gas flow
hypersonics
hypervelocity wind tunnels
Lighthill gas model
shock tubes
shock tunnels
shock waves
supersonic flow
wind tunnels

hypersonic forces
GS aerodynamic forces
. hypersonic forces
RT aerodynamic drag
hypersonics
lift

hypersonic gliders
DEF Unpowered vehicles, specifically reentry vehicles, designed to flow at hypersonic speeds.
GS gliders
. hypersonic gliders
. . X-20 aircraft
hypersonic vehicles
. hypersonic aircraft
. . hypersonic gliders
. . . X-20 aircraft
RT aerospace planes
∞ aircraft
ASSET gliders
boostglide vehicles
HL-10 reentry vehicle
HLD-35 reentry vehicle
lifting reentry vehicles
paragliders

hypersonic heat transfer
GS transmission
. heat transmission
. . heat transfer
. . . aerodynamic heat transfer
. . . . hypersonic heat transfer
RT aerothermodynamics
hypersonics
supersonic heat transfer

hypersonic inlets
GS intake systems
. air intakes
. . hypersonic inlets
RT bypass ratio
∞ diffusers
engine inlets
inlet airframe configurations
nose inlets
side inlets
supersonic inlets

hypersonic nozzles
RT conical nozzles
∞ nozzles
rocket nozzles
supersonic nozzles
transonic nozzles
wind tunnel nozzles

hypersonic reentry
GS atmospheric entry
. reentry
. . hypersonic reentry
. . . uncontrolled reentry (spacecraft)
RT aerodynamic heating
aerothermodynamics
Berenice rocket vehicle
boundary layer plasmas
entry guidance (STS)
reentry effects
reentry physics
spacecraft reentry

hypersonic shock
RT hypersonics
Mach cones
noise (sound)
shock waves

hypersonic speed
SN (MACH 5 OR GREATER)
GS rates (per time)
. hypersonic speed
velocity
. hypersonic speed
RT high speed
hypersonics
∞ hypervelocity
supersonic speed

hypersonic test apparatus
RT hypersonics
hypervelocity wind tunnels
missile ranges
supersonic test apparatus
∞ test equipment

hypersonic vehicles
GS hypersonic vehicles
. hypersonic aircraft
. . hypersonic gliders
. . . X-20 aircraft
. X-30 vehicle
RT ∞ flight vehicles
HOPE aerospace plane
hypersonics
∞ insulated structures
National Aerospace Plane Program
recoverable spacecraft
reentry vehicles
∞ spacecraft
test vehicles
∞ vehicles
waveriders
∞ winged vehicles

hypersonic wakes
GS wakes
. hypersonic wakes
RT aircraft wakes
bow waves
hypersonics
shock waves
supersonic wakes

hypersonic wind tunnels
GS test facilities
. wind tunnels
. . hypersonic wind tunnels
. . . cascade wind tunnels
. . . hotshot wind tunnels
. . . plasma jet wind tunnels
. . . shock tunnels
RT blowdown wind tunnels
combustion wind tunnels
hypervelocity wind tunnels
low density wind tunnels
magnetic pistons
shock tubes
subsonic wind tunnels
supersonic wind tunnels
transonic wind tunnels

hypersonics
DEF That branch of aerodynamics that deals with hypersonic flow.
GS fluid mechanics
. fluid dynamics
. . gas dynamics
. . . aerodynamics
. . . . hypersonics
RT aerothermodynamics
hypersonic aircraft
hypersonic flight
hypersonic flow
hypersonic forces
hypersonic heat transfer
hypersonic shock
hypersonic speed
hypersonic test apparatus
hypersonic vehicles
hypersonic wakes
supersonic speed
supersonics

hyperspaces
UF *hypergeometry*
RT hypergeometric functions
hyperplanes
hyperspheres
phase-space integral
∞ space

hyperspheres
RT geometry
hyperspaces
real variables

hypertensin
GS drugs
. vasoconstrictor drugs
. . **hypertensin**
organic compounds
. peptides
. . polypeptides
. . . **hypertensin**
secretions
. endocrine secretions
. . hormones
. . . **hypertensin**

hypertension
GS pressure
. blood pressure
. . **hypertension**
RT myocardial infarction
tranquilizers

hypertext
(added July 1995)
RT artificial intelligence
document markup languages
electronic publishing
human-computer interface
information retrieval
knowledge representation

hyperthermia
RT body temperature
fever
heat stroke
skin temperature (biology)
thermoregulation

hypertonia
USE **osmosis**

hypertrophy
USE **growth**

∞ **hypervelocity**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Extremely high velocity. Applied by physicists to speeds approaching the speed of light, but generally implies speeds of the order of satellite speed and greater.
RT escape velocity
hypersonic speed
orbital velocity
relativistic velocity

hypervelocity accelerators
USE **hypervelocity guns**

hypervelocity cratering
USE **hypervelocity projectiles**
projectile cratering

hypervelocity flow
GS fluid flow
. **hypervelocity flow**
RT flow velocity
supersonic flow

hypervelocity guns
UF *hypervelocity accelerators*
RT ∞ accelerators
ballistics
gas guns
∞ guns
guns (ordnance)
railgun accelerators
ram accelerators

hypervelocity impact
GS impact
. **hypervelocity impact**
RT asteroid collisions
cometary collisions
hydrodynamic ram effect
impact melts
impact velocity
mechanical shock
meteorite collisions
meteoritic damage
point impact
projectile cratering

hypervelocity launchers
GS launchers
. **hypervelocity launchers**
RT gun launchers
railgun accelerators
ram accelerators

hypervelocity projectiles
UF *hypervelocity cratering*
GS projectiles
. **hypervelocity projectiles**
RT ∞ bombardment
light gas guns
meteoroids
micrometeorites
projectile cratering
simulation

hypervelocity wind tunnels
SN (ABOVE MACH 10)
GS test facilities
. wind tunnels
. . **hypervelocity wind tunnels**
. . . cascade wind tunnels
. . . hotshot wind tunnels
. . . plasma jet wind tunnels
. . . shock tunnels
RT blowdown wind tunnels
combustion wind tunnels
hypersonic flow
hypersonic test apparatus
hypersonic wind tunnels
low density wind tunnels
magnetic pistons
shock tubes
supersonic wind tunnels

hyperventilation
DEF Overbreathing. A respiratory minute volume, or pulmonary ventilation that is greater than normal.
RT acidosis
alkalosis
hyperoxia

hypervolemia
RT blood circulation
blood volume
circulatory system

hypnosis
GS sleep
. **hypnosis**
RT anesthesia
suggestion

hypobaric atmospheres
RT altitude simulation
altitude tolerance
∞ atmospheres
high altitude breathing
high altitude environments
high altitude pressure
low pressure
vacuum tests

hypocapnia
DEF Deficiency of carbon dioxide in the blood and body tissues, which may result in dizziness, confusion, and muscular cramps.
GS carbon dioxide tension
. **hypocapnia**
RT blood

hypodermis
GS tissues (biology)
. **hypodermis**

hypodynamia
RT muscles
muscular function

hypoelasticity
GS mechanical properties
elastic properties
. **hypoelasticity**

hypoglycemia
GS metabolism
carbohydrate metabolism
. . **hypoglycemia**

hypokinesia
RT head down tilt
hyperkinesia
muscular function
musculoskeletal system
physical exercise

hypometabolism
GS metabolism
. **hypometabolism**
RT thyroid gland

hypophysis
USE **pituitary gland**

hypotension
GS pressure
. blood pressure
. . **hypotension**
RT hemorrhages

hypothalamus
GS anatomy
. glands (anatomy)
. . endocrine glands
. . . **hypothalamus**
. nervous system
. . central nervous system
. . . brain
. . . . diencephalon
. . . . . **hypothalamus**
RT pituitary gland

hypothermia
RT body temperature
skin temperature (biology)
thermoregulation

hypotheses
GS **hypotheses**
. expectancy hypothesis
. intermittency hypothesis

. Lagrange similarity hypothesis
. null hypothesis
. vorticity transport hypothesis
RT assumptions
inference
mathematical logic
quality control
theorems
∞ theories
theses

hypotonia
GS muscular tonus
. **hypotonia**
RT muscular function

hypoventilation
DEF A respiratory minute volume, or pulmonary ventilation that is less than normal. Also called underbreathing.
GS rates (per time)
. respiratory rate
. . **hypoventilation**

hypovolemia
RT blood circulation
blood volume

hypoxemia
DEF The condition of reduction of the normal oxygen tension in the blood.
GS pressure
. partial pressure
. . oxygen tension
. . . **hypoxemia**
RT hypoxia

hypoxia
DEF Oxygen want or deficiency; any state wherein a physiologically inadequate amount of oxygen is available to, or utilized by, tissue without respect to cause or degree. Used for oxygen deficiency.
UF *oxygen deficiency*
RT anoxia
fasting
hypoxemia
oximetry
oxygen consumption
stress (physiology)

hypsography
GS geography
. **hypsography**
RT contours
datum (elevation)
elevation
mapping
maps
relief maps
topography

hypsometers
GS measuring instruments
. **hypsometers**
RT altimeters
barometers
meteorological instruments
pressure gages

hysteresis
DEF Any of several effects resembling a kind of internal friction, accompanied by the generation of heat within the substance affected. The delay of an indicator in registering a change in a parameter being measured.
RT accuracy
antiferroelectricity
antiferromagnetism
damping
dynamic characteristics
eddy currents
electrical properties
errors
internal friction
magnetic permeability
magnetic properties
mechanical properties
optical bistability
∞ physical properties
precision
retarding
shear properties
tensile strength
time lag
tolerances (mechanics)
viscoelasticity
viscoplasticity

HYTIME
USE **document markup languages**

I

I beams
GS structural members
. beams (supports)
. . **I beams**
RT cantilever beams
curved beams
trusses

I2S cameras
GS optical equipment
. cameras
. . **I2S cameras**
photographic equipment
. cameras
. . **I2S cameras**
RT aircraft instruments
multispectral photography
spacecraft instruments

Iapetus
DEF A satellite of Saturn orbiting at a mean distance of 3,562,000 kilometers.
GS celestial bodies
. natural satellites
. . icy satellites
. . . **Iapetus**
. . Saturn satellites
. . . **Iapetus**
RT Charon
Saturn (planet)

IBM computers
GS data processing equipment
. computers
. . **IBM computers**
. . . IBM 360 computer
. . . IBM 370 computer
. . . IBM 650 computer
. . . IBM 704 computer
. . . IBM 709 computer
. . . IBM 1130 computer
. . . IBM 1401 computer
. . . IBM 1410 computer
. . . IBM 1620 computer
. . . IBM 2250 computer
. . . IBM 7030 computer
. . . IBM 7040 computer
. . . IBM 7044 computer
. . . IBM 7070 computer
. . . IBM 7074 computer
. . . IBM 7090 computer
. . . IBM 7094 computer
. . . IBM personal computers
RT digital computers

IBM PC
USE **IBM personal computers**

IBM personal computers
(added September 1992)
SN (INCLUDES IBM COMPATIBLE PERSONAL COMPUTERS)
UF *IBM PC*
GS data processing equipment
. computers
. . digital computers
. . . microcomputers
. . . . personal computers
. . . . . **IBM personal computers**
. . IBM computers
. . . **IBM personal computers**
RT computer graphics
computer programs

IBM 360 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 360 computer**
. . IBM computers
. . . **IBM 360 computer**

IBM 370 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 370 computer**
. . IBM computers
. . . **IBM 370 computer**

IBM 650 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 650 computer**
. . IBM computers
. . . **IBM 650 computer**

IBM 704 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 704 computer**
. . IBM computers
. . . **IBM 704 computer**

IBM 709 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 709 computer**
. . IBM computers
. . . **IBM 709 computer**

IBM 1130 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 1130 computer**
. . IBM computers
. . . **IBM 1130 computer**

IBM 1401 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 1401 computer**
. . IBM computers
. . . **IBM 1401 computer**

IBM 1410 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 1410 computer**
. . IBM computers
. . . **IBM 1410 computer**

IBM 1620 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 1620 computer**
. . IBM computers
. . . **IBM 1620 computer**

IBM 2250 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 2250 computer**
. . IBM computers
. . . **IBM 2250 computer**

IBM 7030 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 7030 computer**
. . IBM computers
. . . **IBM 7030 computer**

IBM 7040 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 7040 computer**
. . IBM computers
. . . **IBM 7040 computer**

IBM 7044 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 7044 computer**
. . IBM computers
. . . **IBM 7044 computer**

IBM 7070 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 7070 computer**
. . IBM computers
. . . **IBM 7070 computer**

IBM 7074 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 7074 computer**
. . IBM computers
. . . **IBM 7074 computer**

IBM 7090 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 7090 computer**
. . IBM computers
. . . **IBM 7090 computer**

IBM 7094 computer
GS data processing equipment
. computers
. . digital computers
. . . **IBM 7094 computer**
. . IBM computers
. . . **IBM 7094 computer**

Icarus asteroid
GS celestial bodies
. asteroids
. . **Icarus asteroid**
RT asteroid belts

ICBM (missiles)
USE **intercontinental ballistic missiles**

Ice
DEF Water in the solid state; specifically, the dense substance formed in nature by the freezing of liquid water, by the condensation of water vapor directly into ice crystals, or by the recrystallization or compaction of fallen snow. It is colorless to pale blue or greenish blue, usually white from included

gas bubbles. At standard atmospheric pressure, it is formed at and has a melting point of 0 deg. C; in freezing it expands about one eleventh in volume. Ice commonly occurs as hexagonal crystals, and in large masses is classed as a rock. The term is often substituted for glacier, as in "continental ice."
GS ice
. bay ice
. glaciers
. lake ice
. . ice floes
. land ice
. sea ice
. . ice floes
. . icebergs
. . pressure ice
RT aufeis (ice)
cirques (landforms)
frost
ice clouds
polar caps
refrigerants
runway conditions
slush
storms (meteorology)
water

ice clouds
(added March 1989)
GS clouds (meteorology)
. **ice clouds**
RT cloud glaciation
∞ clouds
ice
stratosphere

ice environments
UF *Antarctic environment*
Arctic environments
GS environments
. **ice environments**
RT Earth cryosphere
environment effects
marine environments
planetary cryospheres
sea ice

ice floes
DEF Large fragments or extensive sheets of ice, detached and floating freely in open water.
GS ice
. lake ice
. . **ice floes**
. sea ice
. . **ice floes**
RT oceanography

ice formation
UF *icing*
GS **ice formation**
. aircraft icing
. cloud glaciation
RT bay ice
fouling
freezing
graupel
hail
lake ice
low temperature
pressure ice
sea ice
snow

ice mapping
GS mapping
. **ice mapping**
RT aerial photography
bay ice
Earth resources
hydrography
hydrology
infrared photography
oceanography
photogeology
photography
photomapping
sea ice
space surveillance (spaceborne)
surveillance

ice nuclei
RT Aitken nuclei
cloud glaciation
condensation nuclei
freezing
graupel
hydrometeors
nucleation
∞ nuclei

ice observation
USE **ice reporting**

ice packs
USE **sea ice**

ice prevention
GS prevention
. **ice prevention**
RT aircraft icing
antiicing additives
defrosting
deicers
deicing
heat tapes
heating
melting
storm suppression

ice reporting
UF *ice observation*
RT bay ice
icebergs
meteorological flight
polar meteorology
space surveillance (spaceborne)
surveillance

ice shelves
USE **land ice**

icebergs
DEF Large, massive pieces of floating or stranded glacier ice of any shape, detached (calved) from the front of glaciers into a body of water. Icebergs extend more than 5 m above sea level and have the greater part of their masses (4/5 to 8/9) below sea level. They may reach a length of more than 80 km.
GS ice
. sea ice
. . **icebergs**
resources
. Earth resources
. . **icebergs**
RT ice reporting
land ice

Iceland
GS landforms
. islands
. . **Iceland**
nations
. **Iceland**
RT Europe
Icelandic space program

Icelandic space program
(added August 1990)
GS programs
. space programs
. . European space programs
. . . **Icelandic space program**
RT Iceland

ichthyology
RT fishes
schools (fish)

icing
USE **ice formation**

ICL computers
DEF Family of British digital computers produced by International Computers, Ltd. Used for International Computers Limited.
UF *International Computers Limited*
GS data processing equipment
. computers
. . digital computers
. . . **ICL computers**
RT European Space Agency

icosahedrons
GS geometry
. Euclidean geometry
. . polyhedrons
. . . **icosahedrons**

icy satellites
GS celestial bodies
. natural satellites
. . **icy satellites**
. . . Ariel
. . . Callisto
. . . Dione
. . . Enceladus
. . . Europa
. . . Ganymede
. . . Hyperion
. . . Iapetus
. . . Mimas
. . . Rhea (astronomy)
. . . Tethys
. . . Titania
RT Galilean satellites
Jupiter satellites
satellite surfaces
Saturn satellites

Ida asteroid
(added December 1995)
GS celestial bodies
. asteroids
. . **Ida asteroid**
RT asteroid belts
Galileo spacecraft
meteoroids

Idaho
GS nations
. United States
. . **Idaho**
RT Columbia River Basin (ID–OR–WA)
Yellowstone National Park (ID–MT–WY)

ideal fluids
RT compressible fluids
equations of state
∞ fluids
incompressible fluids
Mollier diagram

ideal gas
DEF A gas which conforms to Boyle's law and has zero heat of free expansion (or also obeys Charles' law). Used for perfect gas.
UF *perfect gas*
GS gases
. ideal gas
RT Bose–Einstein condensates
Dalton law
equations of state
gas density
kinetic theory
kinetics
real gases

identify friend or foe
USE **IFF systems (identification)**

identifying
GS identifying
. crop identification
. IFF systems (identification)
. parameter identification
. rapid ballistics identification
. system identification
. timber identification
RT chemical analysis
coding
cognition
detection
gas detectors
inspection
marking
∞ measurement
missile detection
particulate sampling
perception
recognition
spectral signatures
tracking (position)
ultrasonic flaw detection
Wiswesser notations

identities
RT congruences
∞ equations

IDEP (data exchange)
USE **interservice data exchange program**

idlers
RT bearings
gears
pulleys
rollers
vehicular tracks

IFF systems (identification)
UF *identify friend or foe*
GS identifying
. IFF systems (identification)
RT aircraft detection
cognition
interrogation
recognition
∞ systems

IFR (rules)
USE **instrument flight rules**

IGFET
USE **field effect transistors**

igneous rocks
DEF Rocks or minerals that solidify from molten or partly molten material, i.e., from magma. The term is also applied to processes leading to, related to, or resulting from the formation of such rocks. Igneous rocks constitute one of the three main classes into which rocks are divided, the others being metamorphic rocks and sedimentary rocks.
UF *ignimbrite*
GS rocks
. igneous rocks
. . anorthosite
. . basalt
. . diorite
. . dunite
. . eclogite
. . leisite
. . gabbro
. . granite
. . obsidian
. . . moldavite
. . peridotite
. . pumice
. . rhyolite
. . syenite
. . trachyte
RT andesite
batholiths
breccia
effusives
enstatite
feldspars
ilmenite
lava
magma
mica
minerals
olivine
petrogenesis
pyroxenes
quartz
regolith
rock intrusions
sedimentary rocks
soils
spinel
tourmaline

ignimbrite
USE **igneous rocks**

igniters
DEF Devices used to begin combustion, such as a spark plug in a combustion chamber of a jet engine, or a squib used to ignite the fuel in a rocket.
GS igniters
. initiators (explosives)
. . boosters (explosives)
. . caps (explosives)
. . detonators
. . exploding wires
. . primers (explosives)
. squibs
RT ammunition
electric ignition
explosive devices
ignition
ignition systems
incendiary ammunition
pyrophoric materials
solid propellant ignition
spark plugs

ignition
DEF The initiation of combustion. Used for reignition.
UF *reignition*
GS ignition
. electric ignition
. solid propellant ignition
. spark ignition
RT combustion
combustion physics
firing (igniting)
flame propagation
flammability
flash point
fuel combustion
igniters
premixing
propellant combustion
roasting
sparks
spontaneous combustion
starting

ignition limits
RT combustion
flame retardants
flammability
fuel–air ratio
gas mixtures
∞ limits

ignition systems
RT automobiles
distributors
dwell
electric coils
electric ignition
engines
igniters
internal combustion engines
rocket engines
spark plugs
squibs
starters
∞ systems

ignition temperature
GS temperature
. ignition temperature
. . flash point
RT combustion temperature
flammability
propellant sensitivity
pyrophoric materials
solid propellant ignition
spontaneous combustion
thermites

ignitrons
GS electron tubes
. gas discharge tubes
. . ignitrons
rectifiers
. ignitrons

IGOSS
USE **integrated global ocean station systems**

IGY (geophysical year)
USE **International Geophysical Year**

IHD (hydrological decade)
USE **International Hydrological Decade**

IL-14 aircraft
UF *Ilyushin IL-14 aircraft*
GS Ilyushin aircraft
. IL-14 aircraft
monoplanes
. IL-14 aircraft
transport aircraft
. IL-14 aircraft
RT ∞ aircraft

IL-62 aircraft
UF *Classic aircraft*
Ilyushin IL-62 aircraft
GS commercial aircraft
. **IL-62 aircraft**
Ilyushin aircraft
. **IL-62 aircraft**
jet aircraft
. turbofan aircraft
. . **IL-62 aircraft**
monoplanes
. **IL-62 aircraft**
passenger aircraft
. **IL-62 aircraft**
RT∞ aircraft

IL-76 aircraft
(added September 1994)
GS Ilyushin aircraft
. **IL-76 aircraft**
jet aircraft
. **IL-76 aircraft**
passenger aircraft
. **IL-76 aircraft**
transport aircraft
. **IL-76 aircraft**
RT∞ aircraft

IL-86 aircraft
(added September 1994)
GS Ilyushin aircraft
. **IL-86 aircraft**
jet aircraft
. **IL-86 aircraft**
passenger aircraft
. **IL-86 aircraft**
transport aircraft
. **IL-86 aircraft**
RT∞ aircraft

IL-96 aircraft
(added September 1994)
GS Ilyushin aircraft
. **IL-96 aircraft**
jet aircraft
. **IL-96 aircraft**
passenger aircraft
. **IL-96 aircraft**
transport aircraft
. **IL-96 aircraft**
RT∞ aircraft

ill-conditioned problems (mathematics)
(added March 1994)
DEF In numerical analysis, problems (algorithms) in which a small error in the data or small errors introduced by rounding, truncation, or other computational procedures result in much larger errors in the solution. (See also ILL-POSED PROBLEMS)
RT computation
differential equations
error analysis
ill-posed problems (mathematics)
integral equations
numerical analysis
numerical stability
problem solving
truncation errors
uniqueness

ill-posed problems (mathematics)
(added March 1994)
DEF Problems corresponding to physical system models whose solutions do not satisfy Hadamard's criteria for 'well posedness,' i.e., existence, uniqueness, and continuous dependence on initial data. Most commonly, such problems stem fundamental physical limitations on the accessibility of information about the object or process being studied. (See also ILL-CONDITIONED PROBLEMS)
UF *improperly-posed problems (mathematics)*
RT boundary value problems
differential equations
Fredholm equations
ill-conditioned problems (mathematics)
integral equations
iterative solution
numerical analysis
numerical stability
problem solving
uniqueness

Illiac 3 computer
GS data processing equipment
. computers
. . digital computers
. . . Illiac computers
. . . . **Illiac 3 computer**
RT analog to digital converters
parallel processing (computers)

Illiac 4 computer
GS data processing equipment
. computers
. . digital computers
. . . Illiac computers
. . . . **Illiac 4 computer**
RT analog to digital converters
parallel processing (computers)

Illiac computers
GS data processing equipment
. computers
. . digital computers
. . . **Illiac computers**
. . . . Illiac 3 computer
. . . . Illiac 4 computer

Illinois
GS nations
. United States
. . **Illinois**
RT Ohio River (US)
Wabash River Basin (IL-IN-OH)

Illite
GS clays
. **Illite**
minerals
. **Illite**
RT soils

Illuminance
SN (LIMITED TO DETECTION RATE PER UNIT AREA OF VISIBLE RADIATION—EQUALS LIGHT PRESSURE TIMES SPEED OF LIGHT)
DEF The total luminous flux received on a unit area of a given real or imaginary surface, expressed in such units as the footcandle, lux, or phot. Illuminance is analogous to irradiance, but is to be distinguished from the latter in that illuminance refers only to light and contains the luminous efficiency weighting factor necessitated by the nonlinear wavelength response of the human eye. Used for light pressure.
UF *light pressure*
GS pressure
. radiation pressure
. . luminous intensity
. . . **illuminance**
rates (per time)
. flux density
. . radiant flux density
. . . irradiance
. . . . **illuminance**
. . . luminous intensity
. . . . **illuminance**
RT brightness
illuminating
∞ illumination
light (visible radiation)
luminance
luminosity
radiancy
solar constant
solar flux density
visibility

illuminating
UF *lighting*
RT architecture
brightness
comfort
darkness
environmental engineering
∞ flares
glare
human factors engineering
illuminance
∞ illumination
light sources
light transmission
lighting equipment
luminaires
luminance
photometry
∞ projection
projectors
pyrotechnics
shadows

∞ illumination
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT brightness discrimination
darkening
darkness
∞ diffusers
illuminance
illuminating
illuminators
isophotes
light transmission
luminescence
photometry

illuminators
GS light sources
. **illuminators**
lighting equipment
. **illuminators**
RT∞ illumination
incandescence
luminescence

illusions
GS psychological effects
. **illusions**
. . hallucinations
. . moon illusion
. . oculogravic illusions
. . optical illusion
. . . elevator illusion
RT **afterimages**
images
perception
vision

ilmenite
DEF A mineral having the theoretical composition FeO.TiO2 used principally in the production of titanium oxide.
GS chalcogenides
. oxides
. . metal oxides
. . . iron oxides
. . . . **ilmenite**
. . . titanium oxides
. . . . **ilmenite**
iron compounds
. iron oxides
. . **ilmenite**
minerals
. **ilmenite**
titanium compounds
. titanates
. . **ilmenite**
. titanium oxides
. . **ilmenite**
RT igneous rocks
sands

ILS (landing systems)
USE **instrument landing systems**

Ilyushin aircraft
GS **Ilyushin aircraft**
. IL-14 aircraft
. IL-62 aircraft
. IL-76 aircraft
. IL-86 aircraft
. IL-96 aircraft
RT ∞ aircraft

Ilyushin IL-14 aircraft
USE **IL-14 aircraft**

Ilyushin IL-62 aircraft
USE **IL-62 aircraft**

image analysis
DEF Technique for understanding or quantification of digital data as presented in a two dimensional format.
GS **image analysis**
. image classification
RT cluster analysis
edge detection
image enhancement
image processing
image resolution
optical flow (image analysis)
pattern recognition
radar imagery
remote sensing
satellite imagery
scene analysis

image classification
(added July 1993)
DEF The sorting of remotely sensed image data by any one or more of a variety of means.
GS image analysis
. **image classification**
RT atmospheric correction
change detection
classifications
∞ classifying
image correlators
image enhancement
image processing
imaging techniques
optical data processing
pattern recognition
remote sensing
remote sensors

image contrast
GS contrast
. **image contrast**
RT focusing
gray scale
pattern registration
resolution
self focusing
signal to noise ratios
smear
visibility

image converters
DEF Optoelectronic devices capable of changing the spectral characteristics of a radiant image. Examples of such changes are infrared to visible and x ray to visible.
GS optical equipment
. **image converters**
. . celescopes
. . image tubes
. . . thermicons
RT camera tubes
∞ converters
Lallemand cameras
light amplifiers
microchannels
photocathodes

image correlators
UF *SIMICOR (image correlator)*
simultaneous image correlator
GS correlators
. **image correlators**
RT holography
image classification
imaging techniques
map matching guidance
optical correlators
pattern registration
speckle holography
video landmark acquisition and tracking

image dissector tubes
GS electron tubes
. camera tubes
. . **image dissector tubes**
television equipment
. **image dissector tubes**
RT guidance sensors
satellite orientation

image enhancement
RT band ratioing
focusing
geometric rectification (imagery)
gray scale
image analysis
image classification
images
imaging techniques
light amplifiers
radiometric correction
resolution
signal to noise ratios
tomography
vegetative index

image filters
RT ∞ filters
imaging techniques

image furnaces
GS heating equipment
. furnaces
. . **image furnaces**
laboratory equipment
. **image furnaces**
RT arc heating
carbon arcs

image intensifiers
UF *intensifier tubes*
GS intensifiers
. **image intensifiers**
. . image orthicons
RT amplifiers
imaging techniques
Lallemand cameras
light amplifiers
night vision
orthicons
phosphors
photocathodes

image motion compensation
RT aerial photography
∞ compensation
imaging techniques
pattern registration
video compression

image orthicons
GS electron tubes
. camera tubes
. . orthicons
. . . **image orthicons**
intensifiers
. image intensifiers
. . **image orthicons**
RT photocathodes

image processing
DEF Conversion of optical images into digital data form for storage and reconstruction by computer techniques.
GS **image processing**
. band ratioing
. geometric rectification (imagery)
RT atmospheric correction
change detection
cluster analysis
computer aided tomography
data processing
discrete cosine transform
edge detection
Feature Identification and Location Exper
frames (data processing)
geometric accuracy
gray scale
image analysis
image classification
imagery
imaging techniques
laser guide stars
multisensor applications
nap-of-the-earth navigation
onboard data processing
optical data processing
optical flow (image analysis)
point spread functions
preprocessing
principal components analysis
∞ processing
pushbroom sensor modes
raster scanning
scientific visualization
spatial resolution
vector quantization
video compression
wavelet analysis

image reconstruction
DEF The reproduction of the original scene from data stored or transmitted after scanning by an electron beam. In reprography, the re–creation of graphic images from digital data stored in a computer.
RT display devices
holography
imaging techniques
pattern registration

image resolution
DEF In optics, a measure of the ability of an optical instrument to produce separable images of different points on an object.
GS resolution
. **image resolution**
RT electro–optical photography
geometric accuracy
high definition television
image analysis
imagery
matching
multispectral photography
pattern registration
spatial resolution

image rotation
DEF Mechanized or digital rotation of an image.
GS gyration
. rotation
. . **image rotation**
RT imaging techniques

image transducers
GS transducers
. **image transducers**
RT camera tubes
imaging techniques
Lallemand cameras

image tubes
DEF Electron tubes that reproduce on their fluorescent screens images of irradiation patterns incident on their photosensitive surfaces.
GS electron tubes
. **image tubes**
. . thermicons
optical equipment
. image converters
. . **image tubes**
. . . thermicons
RT cathode ray tubes
display devices
flying spot scanners
head–up displays
monoscopes

image velocity sensors
RT images
imaging techniques
∞ sensors

imagery
GS **imagery**
. fanciform
. microwave imagery
. photography
. . aerial photography
. . all sky photography
. . astronomical photography
. . autoradiography
. . black and white photography
. . chronophotography
. . cinematography
. . cloud photography
. . color photography
. . electron photography
. . electro–optical photography
. . fractography
. . frame photography
. . high speed photography
. . holography
. . . acoustical holography
. . . microwave holography
. . . speckle holography
. . . white light holography
. . infrared imagery
. . lunar photography
. . metric photography
. . microwave photography
. . multispectral photography
. . . infrared photography
. . . . color infrared photography
. . radar photography
. . orthophotography
. . photomicrography
. . rocket–borne photography
. . shadowgraph photography
. . . Schlieren photography
. . spaceborne photography
. . . satellite–borne photography
. . spectrophotography
. . stereoscopy
. . . stereophotography
. . streak photography
. . ultraviolet photography
. . ultraviolet photometry
. . underwater photography
. . urography
. radar imagery
. radiography
. . angiography
. . autoradiography
. . neutron radiography
. . tomography
. . . computer aided tomography
. . urography
. reproduction (copying)
. . xerography
. satellite imagery
. spectroheliographs
. ultraviolet imagery
. x ray imagery
. . ultraviolet photography
RT accusto–optics
appearance
Atmospheric & Oceanographic Inform Sys
change detection
contour sensors
display devices
Earth resources
geographic information systems
geometric rectification (imagery)
graphic arts
ground truth
holographic optical elements
image processing
image resolution
microwave sounding
multispectral radar
radar signatures
scene analysis
sea truth
signature analysis

images
UF *optical images*
GS **images**
. afterimages
. retinal images
RT contour sensors
display devices
evaporography
halos
helmet mounted displays
illusions
image enhancement
image velocity sensors
∞ optics
perception
photographs
raster scanning
representations
spatial filtering
vision

imaging radar
GS radar
. **imaging radar**
. . Shuttle Imaging Radar
RT radar imagery
remote sensors
side–looking radar
synthetic aperture radar

imaging spectrometers
GS measuring instruments
. spectrometers
. . **imaging spectrometers**
RT imaging techniques
remote sensing
spectral reflectance
spectrophotometry

imaging techniques
GS **imaging techniques**
. acoustic imaging
. . acoustical holography
. raster scanning
. speckle holography
RT acoustic microscopes
acoustical holography
adaptive optics
charge injection devices
crop identification
flat panel displays
gray scale
high definition television
hologrammetry
image classification
image correlators
image enhancement
image filters
image intensifiers
image motion compensation
image processing
image reconstruction
image rotation
image transducers
image velocity sensors
imaging spectrometers
∞ methodology
microwave holography
modulation transfer function
multimedia
multisensor applications
multisensor fusion
multispectral band scanners
multispectral photography
multispectral radar
optical relay systems
optical transfer function
∞ optics
particle image velocimetry
pattern registration
photography
pixels
principal components analysis

radar imagery
rapid ballistics identification
resolution cell
satellite imagery
scene analysis
spatial resolution
streak photography
synthetic apertures
television systems
ultrasonic scanners
vegetative index
x ray imagery

∞ **imbeddings**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT encapsulating
imbeddings (mathematics)
invariant imbeddings
∞ matrices

imbeddings (mathematics)
GS geometry
. topology
. . **imbeddings (mathematics)**
. . . invariant imbeddings
RT ∞ imbeddings
strange attractors

IMBLMS
SN (INTEGRATED MEDICAL AND BEHAVIORAL LABORATORY MEASUREMENT SYSTEM)
UF *Integ Med and Behavioral Lab Measur System*
RT bioinstrumentation
biomedical data
measuring instruments
medical equipment

IMCC (control center)
USE **integrated mission control center**

IME satellite
USE **International Magnetospheric Explorer**

imides
GS nitrogen compounds
. **imides**
. . bismaleimide
. . succinimides
RT amides

imines
UF *Schiff bases*
GS nitrogen compounds
. **imines**
RT amines

IMLSS
SN (INTEGRATED MANEUVERING AND LIFE SUPPORT SYSTEM)
UF *Integrated Maneuvering Life Support Sys*
GS self maneuvering units
. **IMLSS**
support systems
. life support systems
. . portable life support systems
. . **IMLSS**
RT astronaut maneuvering equipment
extravehicular activity
extravehicular mobility units
∞ systems

immersion
USE **submerging**

immiscibility
USE **solubility**

immittance
USE **electrical impedance**

immobilization
RT damage
impairment
∞ motion

immune systems
GS physiological defenses
. **immune systems**
RT acquired immunodeficiency syndrome
antibodies
antigens
human immunodeficiency virus
immunity
immunoassay
immunology
leukocytes
lymphocytes

immunity
RT immune systems
infectious diseases
inoculation
∞ resistance
toxins and antitoxins

immunoassay
DEF An assay that utilizes antigen–antibody reactions for the determination of biochemical substances. Used for plasma renin activity.
UF *plasma renin activity*
GS immunoassay
. radioimmunoassay
RT antigens
assaying
biochemistry
immune systems
immunology
radiobiology

immunology
GS medical science
. **immunology**
RT acquired immunodeficiency syndrome
allergic diseases
anaphylaxis
antibodies
antigens
antiserums
biocompatibility
∞ biology
human immunodeficiency virus
immune systems
immunoassay
prophylaxis
radioimmunoassay
veterinary medicine

IMP
UF *Interplanetary Monitoring Platform*
GS artificial satellites
. lunar satellites
. . **IMP**
. scientific satellites
. . Explorer satellites
. . . **IMP**
lunar spacecraft
. lunar satellites
. . **IMP**

IMP-1
USE **Explorer 18 satellite**

IMP-2
USE **Explorer 21 satellite**

IMP-3
USE **Explorer 28 satellite**

IMP-4
USE **Explorer 34 satellite**

IMP-5
USE **Explorer 41 satellite**

IMP-6
USE **Explorer 43 satellite**

IMP-7
USE **Explorer 47 satellite**

IMP-8
USE **Explorer 50 satellite**

IMP-A
USE **Explorer 18 satellite**

IMP-B
USE **Explorer 21 satellite**

IMP-C
USE **Explorer 28 satellite**

IMP-D
USE **Explorer 33 satellite**

IMP-E
USE **Explorer 35 satellite**

IMP-F
USE **Explorer 34 satellite**

IMP-G
USE **Explorer 41 satellite**

IMP-H
USE **Explorer 47 satellite**

IMP-I
USE **Explorer 43 satellite**

IMP-J
USE **Explorer 50 satellite**

impact
GS **impact**
. economic impact
. electron impact
. hypervelocity impact
. ion impact
. point impact
. proton impact
RT deceleration
hydrodynamic ram effect
impingement
mechanical shock
penetration
percussion
pressure
shock absorbers
shock resistance
shock waves
stresses

impact acceleration
DEF The acceleration generated by very sudden starts or stops of a vehicle. The term is usually applied in the context of physiological acceleration. Used for impact deceleration.
UF *impact deceleration*
GS rates (per time)
. acceleration (physics)
. . **impact acceleration**
RT ∞ acceleration
deceleration
impact velocity
mechanical shock
physiological acceleration

railroad humping tests
shock absorbers

Impact damage
GS damage
. **Impact damage**
. . meteoritic damage
. . rain impact damage
RT cratering
craters
ejecta
impact tolerances
Mars craters
meteoroid protection
planetary craters

impact deceleration
USE **impact acceleration**

Impact fusion
DEF The conversion of the kinetic energy of a fast moving, initially stationary, macroparticle projectile into the internal energy of fusile material using a particle accelerator. Impact fusion is generally an inertial confinement fusion concept.
GS inertial confinement fusion
. **Impact fusion**
RT fusion reactors

Impact loads
UF *impact pressures*
GS loads (forces)
. compression loads
. . **Impact loads**
. contact loads
. . **Impact loads**
. dynamic loads
. . transient loads
. . . **Impact loads**
RT blast loads
dynamic pressure
fiber orientation
impact velocity
landing loads
loading rate
random loads
shock loads
structural design criteria

Impact melts
DEF Molten material resulting from hypervelocity impact.
GS melts (crystal growth)
. **Impact melts**
RT celestial bodies
hypervelocity impact
lunar rocks
melting
meteorites
minerals
petrology

Impact prediction
UF *ARIP (impact prediction)*
automatic rocket impact predictors
GS predictions
. **Impact prediction**
RT ballistic trajectories
downrange
guidance (motion)
laser guidance
missile trajectories
range safety
reentry
trajectory analysis

impact pressures
USE **impact loads**

Impact resistance
UF *impact sensitivity*
GS sensitivity
. **Impact resistance**
shock resistance
. **Impact resistance**
RT crashworthiness
propellant sensitivity
∞ resistance
tolerances (physiology)

impact sensitivity
USE **impact resistance**

Impact strength
DEF The amount of energy required to fracture a material. The type of specimen and the testing conditions affect the values and therefore should be specified.
GS mechanical properties
. **Impact strength**
RT brittle materials
brittleness
ductility
earthquake resistance
hardness
notch sensitivity
∞ resistance
shear properties
∞ strength
stress concentration
wave resistance

Impact testing machines
RT drop tests
fatigue tests
∞ machinery
∞ test equipment

Impact tests
GS **Impact tests**
. Charpy impact test
RT brittleness
compression tests
destructive tests
drop tests
fatigue tests
hardness tests
impactors
load tests
∞ materials tests
notch sensitivity
notch strength
notch tests
shock tests
strain rate
stress concentration
∞ tests
toughness

Impact tolerances
GS tolerances (mechanics)
. **Impact tolerances**
RT impact damage

Impact velocity
(added April 1997)
GS velocity
. **Impact velocity**
RT collisions
hypervelocity impact
impact acceleration
impact loads
terminal ballistics
terminal velocity

Impactors
RT crushers
grinding mills
hammers
impact tests

Impairment
RT damage
immobilization
injuries
losses

IMPATT diodes
USE **avalanche diodes**

Impedance
DEF The total opposition that a circuit presents to the flow of an alternating current, specifically the complex quotient of voltage divided by current. Used for dummy loads.
UF *dummy loads*
GS **Impedance**
. acoustic impedance
. electrical impedance
. . electrical resistance
. . . contact resistance
. . . skin resistance
. . . transconductance
. . reactance
. mechanical impedance
. respiratory impedance
RT attenuation coefficients
bandwidth
chokes (restrictions)
∞ conductivity
constrictions
damping
diffusivity
dynamic characteristics
dynamic response
electric coils
electrical properties
∞ hydraulics
mechanical properties
∞ physical properties
∞ resistance
resonant frequencies
Smith chart
time constant
transient response

Impedance matching
RT antenna couplers
couplers
coupling circuits
directional couplers
electric networks
electrical impedance
iterative networks
matching
mode transformers
transfer functions
transmission lines
waveguide tuners
waveguide windows

Impedance measurement
RT electrical impedance
electrical measurement
mechanical impedance
mismatch (electrical)
radio frequency impedance probes

Impedance probes
GS measuring instruments
. **Impedance probes**
. . radio frequency impedance probes
RT resonance probes

impeller blades
USE **rotor blades (turbomachinery)**

impellers
DEF Devices that impart motion to a fluid, specifically in centrifugal compressors, rotary disks which, faced on one or both sides with radial vanes, accelerate the incoming fluid outward into diffusers.
GS rotating bodies
. rotors
. . **impellers**
. . . pump impellers
RT blowers
centrifugal compressors
centrifugal pumps
compressor rotors
pumps
rotor blades (turbomachinery)
stators
turbine wheels
turbines
turbomachine blades
vanes

imperfections
USE **defects**

Imperial Valley (CA)
GS valleys
. **Imperial Valley (CA)**
RT California
deserts
Mexico

impingement
DEF A process resulting in a continuing succession of impacts between (liquid or solid) particles and a solid phase.
GS **impingement**
. jet impingement
RT ablation
attenuation
cavitation flow
corrosion
erosion
gas–solid interactions
impact
incidence
reflection
scattering

implantation
GS **implantation**
. heart implantation
. ion implantation
RT grafting
injection
insertion

implanted electrodes (biology)
GS bioengineering
. bioinstrumentation
. . **implanted electrodes (biology)**
electrodes
. **implanted electrodes (biology)**
RT ∞ biology

implication
RT inference

implosions
DEF The rapid inward collapsing of the walls of vacuum systems or devices as the result of failure of the walls to sustain the ambient pressure.
RT bursts
explosions
explosive decompression
propellant explosions
shock waves

impregnating
RT chemical attack
coatings
finishes
insertion
lubrication
permeating
porosity
preserving
self lubricating materials
self lubrication

improperly-posed problems (mathematics)
USE **ill-posed problems (mathematics)**

Improved TIROS Operational Satellites
USE **ITOS satellites**

improvement
RT correction
public relations
upgrading

impulse generators
DEF Standard reference sources of broadband impulse energy.
RT ∞ generators
impulses
pulse generators
turbines

impulses
DEF The products of the forces and the times during which the forces are applied.
GS **impulses**
. high impulse
. specific impulse
RT impulse generators

impurities
RT contaminants
crystal defects
dirt
heterogeneity
inclusions
point defects
pseudopotentials
quality
trace contaminants
ultrapure metals
wastes

IMS
USE **International Magnetospheric Study**

in situ measurement
(added September 1992)
DEF In situ (Latin for "in original place"). It refers to measurements made at the actual location of the object or material measured.
RT atmospheric composition
atmospheric sounding
balloon sounding
ground truth
∞ measurement
optical measurement
pollution monitoring
remote sensing
rocket sounding
temperature measurement

in-flight monitoring
RT crew procedures (inflight)
crew procedures (preflight)
flight control
flight tests
monitors
telemetry

in-flight starting
USE **air start**

inactivation
USE **deactivation**

incandescence
DEF Emission of light due to high temperature of the emitting material. Any other emission of light is called luminescence.
GS emission
. light emission
. . **incandescence**
RT brightness
color
emissivity
illuminators
light (visible radiation)
luminescence
luminosity
luminous intensity
radiance
spectral emission
thermal emission

incendiary ammunition
GS ammunition
. **incendiary ammunition**
RT bombs (ordnance)
combustion
exothermic reactions
grenades
guns (ordnance)
igniters
missiles
projectiles
propellants
pyrotechnics
∞ rockets

incentive techniques
RT cost incentives
cost reduction
efficiency
management
value engineering

incentives
GS **incentives**
. contract incentives
RT income
management
management methods
motivation
personnel

incidence
DEF Partial coincidence, as a circle and a tangent line. The impingement of a ray on a surface.
GS **incidence**
. grazing incidence
RT angles (geometry)
impingement

incident radiation
RT [illegible]
corpuscular radiation
[illegible]magnetic radiation
[illegible]queness
optical reflection
photon beams
∞ radiation
reflected waves
refracted waves
retroreflection

scattering
Stokes law of radiation
wave incidence control

incineration
USE **Incinerators**

Incinerators
UF *incineration*
RT burners
furnaces
waste disposal
waste energy utilization

∞ **Inclination**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The angle between the plane of an orbit and the reference plane. The equator is the reference plane for geocentric orbits and the ecliptic is the reference plane for heliocentric orbits. Also the magnetic dip.
RT geomagnetism
magnetic equator
orbits
slopes
tendencies

Inclusions
GS defects
. **Inclusions**
RT casting
castings
clathrates
heterogeneity
impurities
metallography
voids

Incoherence
RT discontinuity
nonsynchronization

Incoherent scatter radar
DEF Radar used in the study of the ionosphere, thermosphere, etc.
GS radar
. **Incoherent scatter radar**
. . EISCAT radar system (Europe)
RT incoherent scattering
radar scattering

Incoherent scattering
DEF The phenomena of generating waves with random variations in phase, amplitude, polarization, and direction of propagation when an incident wave encounters matter.
GS scattering
. **Incoherent scattering**
RT coherent scattering
EISCAT radar system (Europe)
electromagnetic radiation
electromagnetic wave transmission
incoherent scatter radar
nuclear scattering
radar scattering

Income
RT budgeting
economics
incentives

Incompatibility
RT corrosion
hazards
∞ interference
solubility

Incompressibility
RT compressibility
fluid mechanics

Incompressible boundary layer
GS boundary layers
. **Incompressible boundary layer**
RT laminar boundary layer
turbulent boundary layer

Incompressible flow
GS fluid flow
. **Incompressible flow**
. . Stokes flow
RT aerodynamics
Beltrami flow
compressible flow
gas flow
Milne–Thomson method
Navier–Stokes equation
Reynolds stress
stream functions (fluids)
subsonic flow

Incompressible fluids
GS **Incompressible fluids**
. micropolar fluids
RT Boussinesq approximation
channel flow
compressible fluids
fluid power
∞ fluids
ideal fluids
Navier–Stokes equation
Oseen approximation
superfluidity

Inconel (trademark)
GS alloys
. nickel alloys
. . **Inconel (trademark)**
RT chromium alloys
iron alloys

Increasing
RT accumulations
augmentation
growth
magnification
promotion
swelling

Indene
GS organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . **Indene**
. hydrocarbons
. . cyclic hydrocarbons
. . . **Indene**

Indentation
RT deformation
hardness

Independent variables
DEF Any of those variables of a problem, chosen according to convenience, which may arbitrarily be specified, and which then determine the other or dependent variables of the problem. The independent variables are often called the coordinates, particularly in problems involving motion in space. Dependent and independent variables can be interchanged, e.g., height and pressure. Used for arguments (mathematics) and parameters.
UF *arguments (mathematics)*
parameters
GS **Independent variables**
. lattice parameters
RT dependent variables
distributed parameter systems
observability (systems)
parameter identification
∞ variable

∞ **Indexes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT indexes (documentation)
indexes (ratios)
KP index
KWIC indexes

Indexes (documentation)
DEF Ordered reference lists of contents of a file or document, together with keys or reference notations for identification or location of those contents.
GS classifications
. **Indexes (documentation)**
. . KWIC indexes
. . Wiswesser notations
RT abstracts
bibliographies
∞ catalogs
documentation
documents
handbooks
∞ indexes
information dissemination
information retrieval
lists
literature
∞ reference systems
selective dissemination of information
sky surveys (astronomy)
space glossaries
summaries
supplements
thesauri

Indexes (ratios)
GS ratios
. **Indexes (ratios)**
. . KP index
. . morphological indexes
. . vegetative index
. . . leaf area index
RT efficiency
∞ indexes
mass to light ratios

India
GS nations
. **India**
RT Asia
Bangladesh
Bhutan
Himalayas
Indian spacecraft
ISRO
Sikkim

Indian Ocean
GS oceans
. **Indian Ocean**
RT Arabian Sea
Indonesia
Madagascar
Mauritius
mid-ocean ridges
Seychelles

Indian space program
GS programs
. space programs

. . **Indian space program**
RT communication satellites
manned space flight
∞ research projects
satellite design
space missions
∞ spacecraft
spacecraft design
technology utilization

Indian Space Research Organization
USE ISRO

Indian spacecraft
UF *Aryabhata*
INSAT satellites
IRS (Indian spacecraft)
SEO (Indian spacecraft)
RT India
∞ spacecraft

Indiana
GS nations
. United States
. . **Indiana**
RT Ohio River (US)
Wabash River Basin (IL–IN–OH)

Indicating instruments
UF *temperature indicators*
GS measuring instruments
. **Indicating instruments**
. . approach indicators
. . astrolabes
. . attitude indicators
. . . gyro horizons
. . cloud height indicators
. . compasses
. . . gyrocompasses
. . . magnetic compasses
. . . solar compasses
. . flow direction indicators
. . . wind vanes
. . position indicators
. . . plan position indicators
. . . radio direction finders
. . . spacecraft position indicators
. . smoke detectors
. . speed indicators
. . . tachometers
. . weight indicators
. . . microbalances
. . . strain gage balances
. . . thermobalances
RT aircraft instruments
control moment gyroscopes
∞ detectors
dials
display devices
flat panel displays
gas detectors
head-up displays
helmet mounted displays
∞ indication
∞ indicators
instrument receivers
∞ instruments
radarscopes
recording instruments
thermocouples
thermopiles

∞ **indication**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT evaluation
indicating instruments
probability theory
signs and symptoms

∞ **indicators**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aircraft guidance
chemical indicators
indicating instruments
methylene blue
rate of climb indicators

Indium
GS chemical elements
. **Indium**
metals
. **Indium**

Indium alloys
GS alloys
. **Indium alloys**
RT aluminum alloys
gallium alloys
lead alloys
tin alloys

Indium aluminum arsenides
(added November 1994)
GS aluminum compounds
. aluminum arsenides
. . **Indium aluminum arsenides**
arsenic compounds
. arsenides
. . aluminum arsenides
. . . **Indium aluminum arsenides**
. . indium arsenides
. . . **Indium aluminum arsenides**
indium compounds
. indium arsenides
. . **Indium aluminum arsenides**
RT ∞ chemical compounds
field effect transistors
high electron mobility transistors
molecular beam epitaxy
p–type semiconductors

Indium antimonides
GS antimony compounds
. antimonides
. . **Indium antimonides**
indium compounds
. **Indium antimonides**
RT semiconductors (materials)

Indium arsenides
GS arsenic compounds
. arsenides
. . **Indium arsenides**
. . . Indium aluminum arsenides
. . . Indium gallium arsenides
indium compounds
. **Indium arsenides**
. . Indium aluminum arsenides
. . Indium gallium arsenides
RT MODFETS

Indium compounds
GS **Indium compounds**
. Indium antimonides
. Indium arsenides
. . Indium aluminum arsenides
. . Indium gallium arsenides
. Indium oxides
. Indium phosphates
. Indium phosphides
. Indium selenides
. . copper indium selenides
. Indium sulfides
. Indium tellurides
RT ∞ chemical compounds
Group 3A compounds
∞ metal compounds

Indium gallium arsenides
(added May 1991)
GS arsenic compounds
. arsenides
. . gallium arsenides
. . . **Indium gallium arsenides**
. . indium arsenides
. . . **Indium gallium arsenides**
gallium compounds
. gallium arsenides
. . **Indium gallium arsenides**
indium compounds
. indium arsenides
. . **Indium gallium arsenides**
RT intermetallics
quantum well lasers
semiconductors (materials)

Indium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . **Indium isotopes**
metals
. **Indium isotopes**

Indium oxides
(added July 1995)
GS chalcogenides
. oxides
. . **Indium oxides**
indium compounds
. **Indium oxides**
RT ∞ chemical compounds

Indium phosphates
GS indium compounds
. **Indium phosphates**
phosphorus compounds
. phosphates
. . **Indium phosphates**

Indium phosphides
GS indium compounds
. **Indium phosphides**
phosphorus compounds
. phosphides
. . **Indium phosphides**
RT quantum well lasers
transferred electron devices

Indium selenides
(added June 1995)
GS chalcogenides
. selenides
. . **Indium selenides**
. . . copper indium selenides
indium compounds
. **Indium selenides**
. . copper indium selenides
selenium compounds
. selenides
. . **Indium selenides**
. . . copper indium selenides
RT semiconductors (materials)
solar cells
thin films

Indium sulfides
GS chalcogenides
. sulfides
. . inorganic sulfides

. . . **indium sulfides**
indium compounds
. **indium sulfides**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **indium sulfides**

indium tellurides
GS chalcogenides
. tellurides
. . **indium tellurides**
indium compounds
. **indium tellurides**
tellurium compounds
. tellurides
. . **indium tellurides**
RT semiconductors (materials)

indium–tin–oxide semiconductors
USE **ITO (semiconductors)**

indoles
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azoles
. . . . pyrroles
. . . . . **indoles**
. . . . . tryptophan
RT methoxy systems

Indonesia
GS landforms
. islands
. . **Indonesia**
nations
. **Indonesia**
RT Indian Ocean
Indonesian space program
Pacific Ocean

Indonesian space program
GS programs
. space programs
. . **Indonesian space program**
RT Indonesia
Palapa 2 satellite
Palapa satellites

indoor air pollution
DEF Pollution found in enclosed spaces often compounded by insufficient air mixing which intensifies the concentration of pollutants caused by outdoor and/or indoor sources.
GS pollution
. environment pollution
. . air pollution
. . . **indoor air pollution**
RT air quality
air sampling
buildings

induced drag
(added July 1992)
GS dynamic characteristics
. drag
. . **induced drag**
RT aerodynamic characteristics
aerodynamic drag
aircraft design
drag reduction

induced fluid flow
USE **fluid flow**

inductance
GS electrical properties
. **inductance**
. . proximity effect (electricity)
electromagnetic properties
. **inductance**
. . proximity effect (electricity)
RT capacitance
electrical impedance
LC circuits
magnetic induction
magnetic properties
reactance
RL circuits
transformers

∞ **induction**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT arc generators
derivation
induction (mathematics)
inference
initiation
magnetic induction
number theory

induction (mathematics)
GS number theory
. **induction (mathematics)**
RT ∞ induction
mathematical logic

induction heating
DEF The generation of heat in any conducting material by means of magnetic flux–induced currents.
GS heating
. **induction heating**
RT furnaces
magnetic induction
magnetic pumping
melting
plasma heating
radio frequency heating
vacuum melting

induction motors
DEF Ac motors in which the primary winding on one member (usually the stator) is connected to the power source and a polyphase secondary winding or a squirrel–cage secondary winding on the other member (usually the rotor) carries induced current.
GS motors
. electric motors
. . **induction motors**
RT alternating current
armatures
asynchronous motors
∞ electric power
electric power supplies
power factor controllers
∞ rotating electrical machines
synchronous motors

induction systems
USE **intake systems**

inductors
RT arc generators
ballasts (impedances)
circuits
∞ coils
electric energy storage
energy storage
magnet coils
toroids

industrial areas
RT cities
commerce
construction industry
∞ facilities
industries
land use
marketing
megalopolises
regional planning
shipyards
site selection
urban development
urban transportation

industrial energy
RT allocations
commercial energy
distributing
domestic energy
economic factors
∞ energy
energy consumption
energy conversion
transportation energy

industrial management
UF *business management*
GS management
. **industrial management**
. . engineering management
. . inventory management
. . . inventory controls
. . personnel management
RT concurrent engineering
production management
research management
systems management
total quality management

industrial plants
UF *factories*
plants (industries)
GS **industrial plants**
. foundries
RT construction industry
∞ facilities
pilot plants

industrial safety
GS safety
. **industrial safety**
RT accidents
benzene poisoning
beryllium poisoning
carbon tetrachloride poisoning
health physics
hydrocarbon poisoning
industries
occupation
reactor safety

industrial wastes
GS wastes
. **industrial wastes**
RT industries
landfills
liquid wastes
soil pollution
solid wastes
waste disposal
waste utilization
waste water

industries
GS **industries**
. aerospace industry
. . aircraft industry
. construction industry
. defense industry

. . weapons industry
RT aircraft production costs
commerce
commercial spacecraft
contract negotiation
contractors
economic development
economic impact
fishing
gross national product
industrial areas
industrial safety
industrial wastes
manufacturing
personnel subsystems
retirement
shipyards
space industrialization
space manufacturing
technologies
technology assessment
technology utilization
utilities

inelastic bodies
USE **rigid structures**

Inelastic collisions
DEF Collisions between two particles in which changes occur both in the internal energy of one or both of the particles and in the sums, before and after collisions, of their kinetic energies.
GS collisions
. **Inelastic collisions**
RT scattering

Inelastic scattering
GS scattering
. **Inelastic scattering**
RT coherent scattering
Compton effect
elastic scattering
electron scattering
Mandelstam representation
nuclear scattering
quark parton model

Inelastic stress
DEF A force acting on a solid and producing a deformation such that the original shape and size of the solid are not restored after the force is removed.
RT cyclic loads
mathematical models
metal fatigue
stress analysis
stress–strain diagrams

Inequalities
GS **inequalities**
. Schwartz inequality
RT ∞ mathematics

Inert atmosphere
DEF A gaseous medium that because of its lack of chemical reaction is used to enclose tests or equipment.
GS controlled atmospheres
. **inert atmosphere**

inert gases
USE **rare gases**

Inertia
DEF Resistance to acceleration. Used for inertial forces.
UF *inertial forces*
GS **inertia**
. inertia principle
. . Mach inertia principle
RT ∞ force
Froude number
mass
moments of inertia
∞ motion
similitude law

Inertia bonding
DEF The joining of materials with friction and pressure.
GS bonding
. **inertia bonding**
RT ∞ joining
metal–metal bonding

inertia moments
USE **moments of inertia**

Inertia principle
GS inertia
. **inertia principle**
. . Mach inertia principle
RT equations of motion
moments of inertia

inertia wheels
USE **counter-rotating wheels**
reaction wheels

Inertial confinement fusion
DEF The process of using intense beams of heavy ions to convey the energy needed to compress and heat small pellets containing deuterium–tritium fuels to achieve ignition of the pellets.
GS **inertial confinement fusion**
. impact fusion
RT strongly coupled plasmas

Inertial coordinates
GS coordinates
. **inertial coordinates**
RT Astroguide Navigation System
geocentric coordinates
inertialess steerable antennas

inertial forces
USE **inertia**

Inertial fusion (reactor)
DEF Reactors in which pellet fusion is initiated by high energy sources including lasers.
RT ∞ fusion
fusion reactors
ion beams
laser fusion
laser plasmas
nuclear fuels
plasma compression
pulsed lasers
relativistic electron beams

Inertial guidance
DEF Guidance by means of the measurement and integration of acceleration from within the craft.
GS guidance (motion)
. **inertial guidance**
. . strapdown inertial guidance
RT injection guidance
midcourse guidance
reentry guidance
satellite guidance
spacecraft guidance
stabilized platforms
terminal guidance

inertial measuring units
USE **inertial platforms**

Inertial navigation
DEF Dead reckoning performed automatically by a device which gives a continuous indication of position by integration of accelerations since leaving a starting point.
GS navigation
. **inertial navigation**
. . Astroguide Navigation System
. . gimballess inertial navigation
RT acceleration measurement
air navigation
all-weather air navigation
celestial navigation
dead reckoning
digital navigation
hyperbolic navigation
navigation aids
polar navigation
radar navigation
radio navigation
Schuler tuning
space navigation
star trackers
strapdown inertial guidance
surface navigation

Inertial platforms
UF *inertial measuring units*
RT gimballess inertial navigation
gyroscopic stability
Kalman–Schmidt filtering
navigation instruments
∞ platforms
three axis stabilization

Inertial reference systems
RT celestial reference systems
∞ reference systems
relativity
∞ systems

Inertial Upper Stage
DEF A solid propulsive upper stage designed to place spacecraft on high Earth orbits or on escape trajectories for planetary missions.
UF *interim upper stage (STS)*
IUS
GS interim stages (spacecraft)
. **Inertial Upper Stage**
RT orbit transfer vehicles
recoverable spacecraft
reusable spacecraft
Space Shuttle orbiters
space shuttles
space transportation
space transportation system
space tugs
Ulysses mission
upper stage rocket engines

Inertialess steerable antennas
GS antennas
. directional antennas
. . steerable antennas
. . . **Inertialess steerable antennas**
arrays
. antenna arrays
. . steerable antennas
. . . **Inertialess steerable antennas**
RT communication equipment
inertial coordinates

Infarction
GS diseases
. heart diseases

. . **infarction**
. . . myocardial infarction
RT **embolisms**
thrombosis
tissues (biology)

infections
USE **infectious diseases**

infectious diseases
UF *infections*
GS **diseases**
. **infectious diseases**
. . airborne infection
. . bacterial diseases
. . . cholera
. . . diphtheria
. . . keratitis
. . . syphilis
. . . tuberculosis
. . . typhoid
. . . typhus
. . conjunctivitis
. . dermatitis
. . . contact dermatitis
. . fungal diseases
. . hepatitis
. . meningitis
. . parasitic diseases
. . viral diseases
. . . acquired immunodeficiency syndrome
. . . influenza
. . . poliomyelitis
. . . smallpox
RT antiseptics
Aspergillus
∞ blisters
epidemiology
immunity
leukopenia

inference
RT **assumptions**
deduction
hypotheses
implication
∞ induction

infestation
UF *insect damage*
RT **beetles**
boll weevils
bollworms
chironomus flies
flatworms
insects
larvae
locusts
moths
parasites
plants (botany)
silkworms
worms

infiltration
GS **infiltration**
. chemical vapor infiltration
RT air conditioning
permeability
porosity
resin film infusion
voids
warfare

infinite span wings
GS airfoils
. thin airfoils
. . thin wings
. . . **infinite span wings**
. wings
. . slender wings
. . . **infinite span wings**
. . thin wings
. . . **infinite span wings**
. . unswept wings
. . . **infinite span wings**
planforms
. wing planforms
. . **infinite span wings**
RT flexible wings

infinity
DEF A point, line, or region, beyond measurable limits.
RT functions (mathematics)
geometry
number theory
probability theory
real variables
series (mathematics)

inflatable devices
USE **inflatable structures**

inflatable gliders
GS expandable structures
. inflatable structures
. . **inflatable gliders**
gliders
. paragliders
. . **inflatable gliders**
RT∞ aircraft

inflatable space structures
(added August 1996)
GS **inflatable space structures**
. inflatable spacecraft
. . Beacon satellites
. . . Beacon Explorer A
. . . Explorer 22 satellite
RT antennas
folding structures
space erectable structures

inflatable spacecraft
GS expandable structures
. inflatable structures
. . **inflatable spacecraft**
. . . Beacon satellites
. . . . Beacon Explorer A
. . . . Explorer 22 satellite
inflatable space structures
. **inflatable spacecraft**
. . Beacon satellites
. . . Beacon Explorer A
. . . Explorer 22 satellite
space erectable structures
. **inflatable spacecraft**
. . Beacon satellites
. . . Beacon Explorer A
. . . Explorer 22 satellite
RT artificial satellites
orbital assembly
self erecting devices
∞ spacecraft
unmanned spacecraft

inflatable structures
UF *deflating*
inflatable devices
GS expandable structures
. **inflatable structures**
. . air bag restraint devices
. . balloons
. . . high altitude balloons
. . . jimsphere balloons
. . . skyhook balloons
. . . superpressure balloons
. . meteorological balloons
. . . jimsphere balloons
. . . ROBIN balloons
. . microballoons
. . tethered balloons
. . ballutes
. . gas bags
. . inflatable gliders
. . inflatable spacecraft
. . . Beacon satellites
. . . . Beacon Explorer A
. . . . Explorer 22 satellite
RT airships
boats
buildings
flexible bodies
flexible wings
floats
folding structures
inflating
life rafts
lunar shelters
pneumatic equipment
pressure suits
radomes
self erecting devices
space erectable structures
space stations
∞ structures
tires
variable geometry structures

inflating
SN (EXCLUDES ECONOMIC INFLATION)
RT expansion
gas injection
growth
inflatable structures
pressure reduction
pressurizing
swelling

inflection points
GS geometry
. Euclidean geometry
. . points (mathematics)
. . . **inflection points**
RT curves (geometry)
. . .ctions (mathematics)
line shape
real variables

influence coefficient
GS coefficients
. **influence coefficient**
. . structural influence coefficients
RT aeroelasticity
discharge coefficient
elastic properties
flutter
force distribution
∞ hydraulics
moment distribution
nozzle thrust coefficients
plastic properties
pressure distribution
stress analysis
structural analysis

influenza
GS diseases
. infectious diseases
. . viral diseases
. . . **influenza**
. respiratory diseases

. . influenza

information
DEF Any facts or data which can be used, transferred, or communicated.
RT annotations
audio tapes
communicating
communication
∞ data
documentation
mathematical tables
news media
presentation
privacy
reports
video tapes

information adaptive system
DEF The spaceborne portion of the NASA End–to–End Data System.
GS information systems
. **information adaptive system**
RT communication equipment
∞ systems

information dissemination
GS communicating
. **information dissemination**
. . messages
. . selective dissemination of information
RT bibliographies
catalogs (publications)
documentation
electronic publishing
extraterrestrial communication
indexes (documentation)
information transfer
integrated library systems
Internet resources
libraries
privacy
reports
summaries

information flow
RT aerospace technology transfer
communicating
communication
∞ flow
information transfer
management
message processing
selective dissemination of information
technology transfer

information management
GS management
. **information management**
. . information resources management
. . records management
RT communicating
communication
data base management systems
data retrieval
data storage
information transfer
integrated library systems
technology transfer

information processing (biology)
DEF An approach to the study of perception, memory, language and/or thought that considers organisms to be complex systems that receive, transform, store and transmit information.
RT artificial intelligence
bioelectricity
brain
cognition
cognitive psychology
electrophysiology
human performance
neurophysiology
perception
psychophysiology

information resources management
(added September 1995)
DEF A comprehensive strategy for managing an organization's information resources throughout the information life cycle, including creation, collection, use, processing, and dissemination.
UF *IRM*
GS management
. information management
. . **information resources management**
. resources management
. . **information resources management**
RT computer information security
data management
data processing
documentation
information transfer
Internet resources
libraries
records management

information retrieval
GS retrieval
. **information retrieval**
RT abstracts
bibliographies
CD–ROM
command languages
computers
data processing
data retrieval
documentation
documents
hypertext
indexes (documentation)
information transfer
integrated library systems
interservice data exchange program
libraries
management information systems
numerical data bases
on–line systems
query languages
search profiles
selective dissemination of information
space glossaries
Starsite program
subjects
thesauri

information systems
GS **information systems**
. Atmospheric & Oceanographic Inform Sys
. Earth Resources Information System
. EOS data and information system
. geographic information systems
. information adaptive system
. integrated library systems
. knowledge based systems
. . expert systems
. cockpit weather information systems
. decision support systems
. management information systems
. pilot support systems
RT CD–ROM
Earth Observing System (EOS)
information transfer
Internet resources
libraries
management systems
multimedia
networks
on–line systems
records management
selective dissemination of information
∞ systems
systems management

information theory
UF *Shannon information theory*
RT ∞ applications of mathematics
automata theory
∞ automation
BCH codes
coding
combinatorial analysis
communication theory
computers
correction
correlation
cryptography
cybernetics
data processing
data transmission
decision theory
ergodic process
error detection codes
Fourier analysis
game theory
∞ logic
machine translation
management information systems
∞ mathematics
maximum entropy method
messages
∞ noise
operations research
parity
Petri nets
phase shift keying
probability theory
random processes
• redundancy
Shannon–Wiener measure
statistical analysis
∞ statistics
stochastic processes
systems engineering
telecommunication
terms
∞ theories

information transfer
RT document markup languages
information dissemination
information flow
information management
information resources management
information retrieval
information systems
international cooperation
technology transfer
technology utilization
World Wide Web

information transmission
USE **data transmission**

infrared absorption
DEF The taking up of energy from infrared radiation by a medium through which the radiation is passing.
GS energy absorption
. radiation absorption
. . electromagnetic absorption
. . . **infrared absorption**
RT ∞ absorption
atmospheric attenuation
atmospheric optics
infrared radiation
light scattering
optical properties
thermal emission
transmittance
wave attenuation

infrared astronomy
GS astronomy
. **infrared astronomy**
RT astronomical photography
blazars
Infrared Astronomy Satellite
infrared cirrus (astronomy)
infrared photometry
infrared sources (astronomy)
Infrared Space Observatory (ISO)
Kuiper Airborne Observatory
Large Deployable Reflector
SOFIA (airborne observatory)
Space Infrared Telescope Facility

Infrared Astronomy Satellite
DEF A joint NASA–Netherlands–Great Britain spacecraft designed to perform astronomical observations in the infrared spectral region. It was launched on January 25, 1983. Used for IRAS.
UF *IRAS*
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **Infrared Astronomy Satellite**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Infrared Astronomy Satellite**
RT geosynchronous orbits
infrared astronomy
infrared sources (astronomy)
IRAS–Araki–Alcock comet
Netherlands space program
UK satellites

infrared cirrus (astronomy)
(added September 1989)
RT ∞ clouds
cosmic dust
galactic radiation
infrared astronomy
infrared radiation
infrared sources (astronomy)
interstellar matter
molecular clouds

infrared detectors
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . **infrared detectors**
. . . . . FLIR detectors
. . . . . infrared radiometers
. . . . . Advanced Very High Resolution Radiometer
. . . . . infrared scanners
. . . . . visible infrared spin scan radiometer
. . infrared instruments
. . . **infrared detectors**
. . . . FLIR detectors
. . . . infrared radiometers
. . . . . Advanced Very High Resolution Radiometer
. . . . . infrared scanners
. . . . . visible infrared spin scan radiometer
RT bolometers
∞ detectors
electromagnetic measurement
focal plane devices
forest fire detection
infrared signatures
mercury cadmium tellurides
x ray detectors

infrared filters
GS electromagnetic wave filters
. optical filters
. . **infrared filters**
RT electric filters
ultraviolet filters

infrared horizon scanners
USE **horizon scanners**
infrared scanners

infrared imagery
GS imagery
. photography
. . **infrared imagery**
RT color infrared photography
lunar equator
thermography
x ray imagery

infrared inspection
GS inspection
. **infrared inspection**
RT nondestructive tests
quality control

infrared instruments
GS measuring instruments
. radiation measuring instruments
. . **infrared instruments**
. . . infrared detectors
. . . . FLIR detectors
. . . . infrared radiometers
. . . . . Advanced Very High Resolution Radiometer
. . . . . infrared scanners
. . . . . visible infrared spin scan radiometer
. . . infrared interferometers
. . . infrared spectrometers
. . . . filter wheel infrared spectrometers
. . . infrared spectrophotometers
RT Advanced Very High Resolution Radiometer
forest fire detection

infrared interferometers
GS measuring instruments
. interferometers
. . **infrared interferometers**
. radiation measuring instruments
. . infrared instruments
. . . **infrared interferometers**
RT astronomical interferometry
interferometry
optical equipment
optical measurement
optical measuring instruments
speckle interferometry

infrared lasers
UF *infrared masers*
IR lasers
irasers
GS stimulated emission devices
. lasers
. . **infrared lasers**
RT argon lasers
carbon dioxide lasers
carbon lasers
carbon monoxide lasers
chemical lasers
dye lasers
gas lasers
HF lasers
liquid lasers
organic lasers
solid state lasers
waveguide lasers
YLF lasers

infrared masers
USE **infrared lasers**

infrared photography
GS imagery
. photography
. . multispectral photography
. . . **infrared photography**
. . . . color infrared photography
RT aerial photography
astronomical photography
black and white photography
cinematography
faint object camera
forest fire detection
geographic information systems
ice mapping
lunar photography
meteorological satellites
METEOSAT satellite
multispectral band cameras
Nimbus satellites
radiometers
satellite–borne photography
timber inventory
ultraviolet photography

infrared photometry
DEF Photometry in the infrared region.
GS optical measurement
. photometry
. . **infrared photometry**
RT astronomical photometry
infrared astronomy
infrared spectra
near infrared radiation
stellar spectrophotometry

infrared radar
DEF Radar covering a range from the limit of the visible spectrum to the shortest microwaves.
GS radar
. **infrared radar**
RT FLIR detectors
optical radar
radar imagery

infrared radiation
DEF Electromagnetic radiation lying in the wavelength interval from 75 microns to an indefinite upper boundary sometimes arbitrarily set at 1000 microns (0.01 centimeter).
GS electromagnetic radiation
. **infrared radiation**

. . far infrared radiation
. . near infrared radiation
RT beams (radiation)
black body radiation
coherent electromagnetic radiation
energy absorption
evaporography
exhaust emission
heat
infrared absorption
infrared cirrus (astronomy)
infrared signatures
infrared sources (astronomy)
light (visible radiation)
microwaves
monochromatic radiation
planetary radiation
polarized electromagnetic radiation
∞ radiation
Seyfert galaxies
solar radiation
sunlight
terrestrial radiation
thermal radiation
wavelengths
xenon lamps

infrared radiometers
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . infrared detectors
. . . . . **infrared radiometers**
. . . . . Advanced Very High Resolution Radiometer
. . . . . infrared scanners
. . . . . visible infrared spin scan radiometer
. . infrared instruments
. . . infrared detectors
. . . . **infrared radiometers**
. . . . . Advanced Very High Resolution Radiometer
. . . . . infrared scanners
. . . . . visible infrared spin scan radiometer
RT aerial reconnaissance
atmospheric correction
data acquisition
Earth Resources Program
environmental monitoring
forest fire detection
pressure modulator radiometers
radiometric correction
satellite-borne instruments
thermal mapping

infrared reflection
GS reflection
. **infrared reflection**
RT optical reflection
radiative heat transfer
radio echoes
spread reflection
ultraviolet reflection

infrared scanners
UF *infrared horizon scanners*
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . infrared detectors
. . . . . infrared radiometers
. . . . . **infrared scanners**
. . infrared instruments
. . . infrared detectors
. . . . infrared radiometers
. . . . . **infrared scanners**
. scanners
. **infrared scanners**
RT forest fire detection
horizon scanners
multispectral band scanners
optical equipment
Scanner project
thermal mapping

infrared signatures
DEF The infrared spectral characteristics of an object or uniform land surface which uniquely defines it.
GS signatures
. **infrared signatures**
RT infrared detectors
infrared radiation
infrared spectra
signature analysis

infrared sources (astronomy)
DEF Celestial bodies or astronomical regions emitting a large amount of radiation in the infrared portion of the electromagnetic spectrum.
GS celestial bodies
. **infrared sources (astronomy)**
. . infrared stars
RT astronomy
Herbig–Haro objects
infrared astronomy
Infrared Astronomy Satellite
infrared cirrus (astronomy)
infrared radiation

Infrared Space Observatory (ISO)
DEF An astronomical satellite observatory funded by ESA operating at wavelengths from 3 to 200 microns. The observatory is comprised of a 60 cm Cassegrain telescope, a CCD infrared camera, two Michelson interferometers, and a photopolarimeter.
GS artificial satellites
. ESA satellites
. . **Infrared Space Observatory (ISO)**
. scientific satellites
. . astronomical satellites
. . . **Infrared Space Observatory (ISO)**
ESA spacecraft
. ESA satellites
. . **Infrared Space Observatory (ISO)**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Infrared Space Observatory (ISO)**
telescopes
. spaceborne telescopes
. . **Infrared Space Observatory (ISO)**
RT European space programs
infrared astronomy
spaceborne astronomy

infrared spectra
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . **infrared spectra**
RT ∞ absorption
emission spectra
infrared photometry
infrared signatures
line spectra
microwave spectra
molecular spectra
solar spectra
stellar spectra

infrared spectrometers
GS measuring instruments
. optical measuring instruments
. . **infrared spectrometers**
. . . filter wheel infrared spectrometers
. radiation measuring instruments
. . actinometers
. . . **infrared spectrometers**
. . . . filter wheel infrared spectrometers
. . infrared instruments
. . . **infrared spectrometers**
. . . . filter wheel infrared spectrometers
. spectrometers
. . **infrared spectrometers**
. . . filter wheel infrared spectrometers
optical equipment
. optical measuring instruments
. . **infrared spectrometers**
. . . filter wheel infrared spectrometers
RT Ebert spectrometers
solar spectrometers

infrared spectrophotometers
GS measuring instruments
. optical measuring instruments
. . spectrophotometers
. . . **infrared spectrophotometers**
. radiation measuring instruments
. . actinometers
. . . spectrophotometers
. . . . **infrared spectrophotometers**
. . infrared instruments
. . . **infrared spectrophotometers**
optical equipment
. optical measuring instruments
. . spectrophotometers
. . . **infrared spectrophotometers**
RT chemical analysis
filter wheel infrared spectrometers
photometers

infrared spectroscopy
GS spectroscopy
. **infrared spectroscopy**
RT absorption spectroscopy
astronomical spectroscopy
chemical analysis
electron spectroscopy
laser spectrometers
molecular spectroscopy
molecular structure
optogalvanic spectroscopy
Raman spectroscopy
spectrometers
spectroscopic analysis
sulfur hexafluoride
vacuum spectroscopy

infrared stars
GS celestial bodies
. infrared sources (astronomy)
. . **infrared stars**
. stars
. . **infrared stars**
RT Herbig–Haro objects

infrared suppression
DEF The shielding and/or protection of aircraft engines and exhausts from heat-seeking missiles and/or detecting devices.
RT afterburning
aircraft detection

aircraft engines
cooling systems
exhaust gases
exhaust nozzles
heat shielding
jet engines
jet exhaust
reaction products
suppressors
temperature control

Infrared telescopes
DEF Special optical instruments for astronomical observations in the range from one micron to one millimeter.
GS telescopes
. Infrared telescopes
. . Large Deployable Reflector
. . Space Infrared Telescope Facility
RT astronomy
Astropiane

Infrared tracking
GS tracking (position)
. Infrared tracking
RT antimissile missiles
compensatory tracking
homing devices
missile tracking
optical tracking
pursuit tracking
radiometers

Infrared windows
DEF A frequency region in the infrared where there is good transmission of electromagnetic radiation through the atmosphere.
RT apertures
lasers
optical materials
∞ windows

Infrasonic frequencies
DEF Frequencies below the audiofrequency range.
GS frequencies
. Infrasonic frequencies
RT acoustics

∞ **Ingestion**
SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW.)
RT ingestion (biology)
ingestion (engines)

Ingestion (biology)
GS Ingestion (biology)
. drinking
. eating
. grazing
RT ∞ ingestion
swallowing

Ingestion (engines)
RT bird–aircraft collisions
engine failure
∞ ingestion

Ingots
DEF Cast metals in forms intended for subsequent fabrication.
GS Castings
. Ingots
RT billets
casting
molds
solidification

Ingredients
RT admixtures
∞ components
∞ composition
content
formulations
mixtures

Ingress (spacecraft passageway)
RT air locks
doors
egress
hatches
openings

Inhabitants
GS communities
. Inhabitants
. . mountain inhabitants
RT aborigines
cities
demography
personnel
residential areas

inhalation
USE respiration

∞ **Inhibition**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT attenuation
corrosion prevention
detachment
disabilities
dithers
frustration
inhibition (psychology)
inhibitors
introversion
lethargy
passivity
prevention
∞ reduction
stopping

Inhibition (psychology)
RT conditioning (learning)
∞ inhibition

Inhibitors
DEF Things that inhibit; specifically, substances bonded, taped, or dip dried onto a solid propellant to restrict the burning surface and to give direction to the burning process.
GS Inhibitors
. wear inhibitors
RT additives
antidotes
antifouling
antiicing additives
antioxidants
case bonded propellants
catalysts
coatings
corrosion prevention
∞ inhibition
neutralizers
packaging
passivity
propellant additives
propellant decomposition
propellant storability
retardants
silencers
solid propellant ignition
solid propellants
suppressors

Inhomogeneity
UF nonhomogeneity
RT defects
heterogeneity
nonuniformity

Inhour equation
RT ∞ equations
nuclear reactions
nuclear reactors
reactivity
reactor physics

initial value problems
USE boundary value problems

initialisms
USE abbreviations

Initiation
RT activation
actuation
detonation
∞ generation
∞ induction
inoculation
nucleation
∞ priming
reactor startup tests
starting
stimulation

∞ **Initiators**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT catalysts
initiators (explosives)
styphnates

Initiators (explosives)
UF electroexplosive devices
GS explosive devices
. Initiators (explosives)
. . boosters (explosives)
. . caps (explosives)
. . detonators
. . exploding wires
. . primers (explosives)
igniters
. Initiators (explosives)
. . boosters (explosives)
. . caps (explosives)
. . detonators
. . exploding wires
. . primers (explosives)
RT fuses (ordnance)
∞ initiators
pyrotechnics
styphnates

Injection
GS Injection
. carrier injection
. fluid injection
. . gas injection
. . liquid injection
. . . deep well injection (wastes)
. . . water injection
. fuel injection
. ion injection
. secondary injection
. transearth injection
. translunar injection
RT Barrit diodes
blowing
boundary layer separation
∞ charging
feeding (supplying)

filling
fluid flow
implantation
injectors
input
perforating
supplying

injection carburetors
USE **carburetors**
fuel injection

injection guidance
GS guidance (motion)
. **injection guidance**
RT **ascent trajectories**
celestial navigation
command guidance
inertial guidance
midcourse guidance
rendezvous guidance
satellite guidance
spacecraft guidance
transearth injection
translunar injection

injection lasers
DEF Lasers that use a forward biased semiconductor junction as the active lasing medium.
GS stimulated emission devices
. **lasers**
. . **injection lasers**
RT **aluminum gallium arsenide lasers**
gallium arsenide lasers
gallium arsenides
injection locking
semiconductor lasers

injection locking
RT **carrier injection**
injection lasers
laser mode locking

injection molding
DEF A forming process in which a heat softened or plasticized material is forced from a cylinder into a relatively cool cavity which gives the product a desired shape. A similar process is used for forming solid propellants from quick cure ingredients.
GS forming techniques
. **injection molding**
RT **ceramics**
dies
extruding
melting
molding materials
molds
plastics
resin transfer molding

injectors
DEF Devices that propel fuel or propellant into a combustion chamber under pressure other than atmospheric.
GS **injectors**
. vortex injectors
RT **blowers**
carburetors
ejectors
feeders
fuel injection
fuel systems
injection
jet flow
jet mixing flow
∞ **jet nozzles**
∞ **jets**
nozzle flow
∞ **nozzles**
orifices
pumps
spray nozzles

injun 1 satellite
GS **artificial satellites**
. **injun satellites**
. . **injun 1 satellite**

injun 3 satellite
GS **artificial satellites**
. **injun satellites**
. . **injun 3 satellite**

injun 4 satellite
GS **artificial satellites**
. **injun satellites**
. . **injun 4 satellite**

injun 5 satellite
USE **Explorer 40 satellite**

Injun Explorer
USE **Explorer 25 satellite**

injun satellites
GS **artificial satellites**
. **injun satellites**
. . Explorer 25 satellite
. . Injun 1 satellite
. . Injun 3 satellite
. . Injun 4 satellite

injuries
GS **injuries**
. **back injuries**
. **barotrauma**
. **brain damage**
. **burns (injuries)**
. **crash injuries**
. **ejection injuries**
. **frostbite**
. **lesions**
. . **pulmonary lesions**
. **noise injuries**
. **parachuting injury**
. **paralysis**
. **radiation injuries**
. **whiplash injuries**
RT **accidents**
∞ **blisters**
chemical defense
damage
death
diagnosis
foreign bodies
hazards
hemorrhages
impairment
sabotage
veterinary medicine
wound healing

inks
RT **drawings**
graphic arts
pigments
printing

inland waters
GS **water**
. **inland waters**
. . ground water
RT **Great Lakes (North America)**
Great Salt Lake (UT)
lakes
rivers
springs (water)
water pollution
water resources
water runoff

inlet airframe configurations
DEF Optimum locations of engine inlets for various purposes.
GS **intake systems**
. **air intakes**
. . **inlet airframe configurations**
RT **bypass ratio**
engine inlets
flow geometry
hypersonic inlets
inlet flow
inlet nozzles
nose inlets
side inlets
supersonic inlets

inlet flow
GS **fluid flow**
. **internal flow**
. . **inlet flow**
RT **bypass ratio**
choked flow
∞ **diffusers**
dump combustors
flow geometry
fluid injection
head flow
inlet airframe configurations
intake systems
∞ **pressure drop**
supersonic inlets
vortex generators

inlet nozzles
RT **air intakes**
annular nozzles
bypass ratio
conical nozzles
∞ **diffusers**
engine inlets
exhaust nozzles
inlet airframe configurations
intake systems
internal compression inlets
∞ **nozzles**
openings
pipe nozzles

inlet pressure
DEF In connection with performance data on pumps, when not otherwise specified, the total static pressure measured in a standard testing chamber by a vacuum gage located near the inlet port.
GS **pressure**
. **inlet pressure**
RT **pressure gradients**
pressure recovery
stagnation pressure
water pressure

inlet temperature
DEF A location for measuring the temperature of fluids, particles, etc., entering a heat system, an engine, or other machine.
GS **temperature**
. **inlet temperature**
RT **air intakes**
engine inlets

fuel systems
gas temperature
intake systems

inlets (devices)
USE **intake systems**

inlets (topography)
DEF Small narrow openings, recesses, indentations, or other entrances into coastlines or shores of lakes or rivers, through which water penetrates into land.
GS landforms
. **inlets (topography)**
. . bayous
. . Cook Inlet (AK)
RT bays (topographic features)
Delaware Bay (US)
fiords
gulfs
lagoons
Persian Gulf
Saginaw Bay (MI)
sounds (topographic features)

inliers (landforms)
DEF Areas or groups of rocks surrounded by rocks of younger age.
GS landforms
. **inliers (landforms)**
RT erosion
geological faults
geology
petrography
petrology
rock intrusions
rocks
structural properties (geology)

INMARSAT satellites
(added September 1994)
GS artificial satellites
. **INMARSAT satellites**
RT communication satellites
international cooperation
Marisat satellites
NAVSTAR satellites
telecommunication

inner radiation belt
GS environments
. **inner radiation belt**
particles
. charged particles
. . magnetically trapped particles
. . . radiation belts
. . . . **inner radiation belt**
. corpuscular radiation
. . radiation belts
. . . **inner radiation belt**
. trapped particles
. . magnetically trapped particles
. . . radiation belts
. . . . **inner radiation belt**
RT artificial radiation belts
outer radiation belt
proton belts
∞ radiation
single event upsets

inoculation
UF *seeding (inoculation)*
RT crystal growth
crystallization
immunity
initiation
nucleation
vaccines

inoculum
GS serums
. **inoculum**
vaccines
. **inoculum**
RT antibodies
antigens
physiological defenses

inorganic chemistry
RT analytical chemistry
∞ chemistry

inorganic coatings
GS coatings
. **inorganic coatings**
. . anodic coatings
. . ceramic coatings
RT antiradar coatings
protective coatings

inorganic compounds
GS **inorganic compounds**
. ammonia
. . liquid ammonia
RT acids
∞ **bases**
∞ chemical compounds
flame retardants
intermetallics
molten salts
∞ salts

∞ **inorganic materials**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED CONSULT THE TERMS LISTED BELOW)
RT ∞ **materials**
nonflammable materials
refractory materials
thermochromatic materials
vitreous materials

inorganic nitrates
GS nitrogen compounds
. nitrates
. . **inorganic nitrates**
. . . ammonium nitrates
. . . hydrazine nitrate
. . . potassium nitrates
. . . silver nitrates
. . . sodium nitrates

inorganic peroxides
UF *superoxides*
GS chalcogenides
. oxides
. . anhydrides
. . peroxides
. . . . **inorganic peroxides**
. . . . . hydrogen peroxide
RT organic peroxides

inorganic sulfides
GS chalcogenides
. sulfides
. . **inorganic sulfides**
. . . barium sulfides
. . . bismuth sulfides
. . . cadmium sulfides
. . . calcium sulfides
. . . copper sulfides
. . . hydrogen sulfide
. . . indium sulfides
. . . lead sulfides
. . . molybdenum sulfides
. . . . molybdenum disulfides
. . . polysulfides
. . . strontium sulfides
. . . zinc sulfides
. . . . wurtzite
. . . . zincblende
sulfur compounds
. sulfides
. . **inorganic sulfides**
. . . barium sulfides
. . . bismuth sulfides
. . . cadmium sulfides
. . . calcium sulfides
. . . copper sulfides
. . . hydrogen sulfide
. . . indium sulfides
. . . lead sulfides
. . . molybdenum sulfides
. . . . molybdenum disulfides
. . . polysulfides
. . . strontium sulfides
. . . zinc sulfides
. . . . wurtzite
. . . . zincblende

inositols
GS organic compounds
. carbohydrates
. . sugars
. . . **inositols**

input
RT accumulations
collection
feeding (supplying)
filling
injection
∞ loading
output
reading
replenishment
supplying

input/output routines
GS computer programs
. computer systems programs
. . **input/output routines**
RT data transfer (computers)
disk operating system (DOS)
operating systems (computers)
random access
∞ routines

INSAT satellites
USE **Indian spacecraft**

insect damage
USE **infestation**

insecticides
GS poisons
. pesticides
. . **insecticides**
. . . Carbamates (tradename)
. . . . urethanes
. . . DDT
. . . dieldrin
. . . phenothiazines
RT endrin
entomology
toxicology

insects
GS animals
. invertebrates
. . arthropods
. . . **insects**
. . . . bees
. . . . bollworms
. . . . chironomus flies
. . . . cockroaches

. . . . Coleoptera
. . . . . beetles
. . . . . tribolia
. . . . boll weevils
. . . . crickets
. . . . Drosophila
. . . . fireflies
. . . . grasshoppers
. . . . locusts
. . . . moths
. . . . . silkworms
RT entomology
infestation
larvae
pupa

insensitivity
USE **sensitivity**

insertion
GS **insertion**
. orbit insertion
RT collating
embedding
grafting
implantation
impregnating
inserts
network analysis
transmission loss

insertion loss
RT energy dissipation
losses
transmission loss

inserts
GS **inserts**
. nozzle inserts
RT accessories
bushings
fasteners
fittings
insertion
linings
spacers
spools
washers (spacers)

inshore zones
USE **beaches**

insolation
DEF In general, solar radiation received at the Earth's surface. The rate at which direct solar radiation is incident upon a unit horizontal surface at any point on or above the surface of Earth. (Contracted from INcoming SOLar radIATION)
RT greenhouse effect
meteorology
solar heating
solar radiation
sunlight

insomnia
GS sleep
. **insomnia**
RT sleep deprivation

inspection
DEF The process of measuring, examining, testing, gaging, or making other determinations with respect to materials, products, services, systems, or environments.
GS **inspection**
. infrared inspection
. x ray inspection
RT acceptability
checkout
chemical tests
construction
detection
endoscopes
evaluation
examination
identifying
nondestructive tests
performance tests
quality control
sampling
specifications
standards
static tests
statistical analysis
surveillance
tolerances (mechanics)
ultrasonic flaw detection

inspector satellite
GS artificial satellites
. **inspector satellite**
military spacecraft
. reconnaissance spacecraft
. . **inspector satellite**

inspiration
RT intellect
mental performance
psychology

instability
USE **stability**

installation
USE **installing**

installation manuals
GS documents
. manuals
. . **installation manuals**

installing
UF *installation*
RT assembling
construction
look angles (electronics)
maintenance
relocation
replacing
retrofitting

instantons
DEF Field configurations of Yang–Mills theory which are localized in space and time. These configurations are solutions of the Yang–Mills field equations in Euclidean space time which allow the transitions (tunneling) from one vacuum state to another.
RT elementary particles
plasma physics
quantum chromodynamics
quarks

institutions
GS **institutions**
. bureaus (organizations)
RT federations
teams

instruction sets (computers)
RT alphanumeric characters
Boolean algebra
computer programs
mathematical logic

instructions
USE **education**

instructors
UF *teachers*
GS personnel
. **instructors**
RT education
learning
schools
students
training evaluation
universities

instrument approach
DEF A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing, or to a point from which a landing may be made visually.
GS approach
. **instrument approach**
RT aircraft approach spacing
aircraft instruments
approach control
approach indicators
blind landing
flight control
flight instruments
glide paths
landing aids
landing radar
night flights (aircraft)

instrument compensation
GS **instrument compensation**
. temperature compensation
RT adaptive optics
calibrating
∞ compensation
error correcting devices
laser guide stars
systematic errors

instrument drift
USE **drift (instrumentation)**

instrument errors
GS errors
. **instrument errors**
RT bias
boresight error
calibrating
drift (instrumentation)
linearity
optical correction procedure
spectral sensitivity
systematic errors

instrument flight rules
UF *IFR (rules)*
GS rules
. flight rules
. . **instrument flight rules**
RT air navigation
air traffic control
approach control
beacons
blind landing
flight conditions
flight instruments
flight plans
landing
low visibility

instrument landing systems
DEF A system which provides, in the aircraft, a display of the lateral, longitudinal, and vertical

references necessary for a landing. Used for ILS (landing systems).
UF *ILS (landing systems)*
GS landing aids
. instrument landing systems
. . all-weather landing systems
RT air traffic control
aircraft guidance
aircraft instruments
aircraft landing
airports
approach control
approach indicators
automatic landing control
blind landing
display devices
flight control
flight instruments
glide paths
ground based control
∞ instruments
landing
landing instruments
night flights (aircraft)
radar
radar approach control
radio altimeters
radio beacons
∞ systems
tracking (position)

instrument orientation
RT alignment
attitude (inclination)
bearing (direction)
directivity
look angles (electronics)
∞ orientation
positioning

instrument packages
GS packages
. instrument packages
. . Apollo Lunar Surface Experiments Package
. . EASEP
. . EREP
RT AMPS (satellite payload)
automatic weather stations
data collection platforms
local scientific survey module
modules
molecular shields
ocean data acquisitions systems
Orbiting Frog Otolith
payload assist module
payloads
satellite-borne instruments
SIM
spacecraft instruments
weather stations

instrument receivers
RT controllers
∞ detectors
display devices
indicating instruments
∞ instruments
isotropic turbulence
measuring instruments
receivers
recording instruments
transducers

instrument transformers
GS transformers
. instrument transformers
RT ∞ converters
resolvers

instrument transmitters
GS transmitters
. instrument transmitters
RT controllers
∞ instruments
measuring instruments
recording instruments
transducers

instrumental analysis
USE **analyzing**
automation

instrumentation
USE **instruments**

∞ **instruments**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *instrumentation*
RT actuators
Advanced Range Instrumentation Ship
aircraft instruments
Apollo Lunar Surface Experiments Package
automatic control
bioinstrumentation
bubble technique
controllers
densimeters
display devices
drag force anemometers
EASEP
EREP
flight instruments
force vector recorders
haploscopes
heliostats
helmet mounted displays
indicating instruments
instrument landing systems
instrument receivers
instrument transmitters
laser altimeters
measuring instruments
meteorological instruments
microwave sensors
monitors
navigation instruments
oculometers
packages
propellant actuated instruments
recording instruments
remote control
rocket-borne instruments
satellite instruments
satellite-borne instruments
scatterometers
SIM
sodar
sound detecting and ranging
spacecraft instruments
surgical instruments
transducers
transmitters
turbine instruments
ultrasonic densimeters

∞ **insulated structures**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT dielectrics
electrical insulation
heat radiators
heat shielding
hypersonic vehicles
insulation
radiation shielding
reentry shielding
reentry vehicles
spacecraft shielding

insulating materials
USE **insulation**

insulation
SN (MATERIAL)
UF *insulating materials*
GS insulation
. electrical insulation
. multilayer insulation
. thermal insulation
RT absorbers (materials)
asbestos
ceilings (architecture)
composite materials
concretes
∞ construction materials
damping
honeycomb structures
∞ insulated structures
insulators
interlayers
isolation
isolators
jackets
lining processes
linings
∞ materials
micarta
oxides
potting compounds
protection
suppressors
vermiculite
waterproofing

insulators
SN (EXCLUDES THERMAL INSULATION—LIMITED TO DEVICES COMPOSED OF ELECTRICALLY INSULATIVE MATERIALS)
RT attenuators
dielectrics
electric conductors
electrical insulation
insulation
transmission lines

insulin
GS drugs
. insulin
secretions
. endocrine secretions
. . insulin
RT diabetes mellitus

insurance (contracts)
DEF Coverage by contract whereby one party undertakes to indemnify or guarantee another against loss by a specified contingency or peril.
GS contracts
. insurance (contracts)
RT agreements
air law
aircraft accident investigation
aircraft accidents
assurance
economic factors
extensions
grants
legal liability

public law
space commercialization
space law

Intake systems
UF *induction systems*
inlets (devices)
GS **intake systems**
. air intakes
. . engine inlets
. . hypersonic inlets
. . inlet airframe configurations
. . supersonic inlets
. conical inlets
. helical inducers
. internal compression inlets
. nose inlets
. side inlets
RT aerodynamic configurations
annular ducts
bypass ratio
cooling systems
duct geometry
ducted bodies
ducts
entrances
exhaust systems
feed systems
feeders
fuel systems
inlet flow
inlet nozzles
inlet temperature
manifolds
openings
pipe nozzles
plenum chambers
ramps (structures)
scoops
∞ systems
∞ water intakes

Intelsat satellite
GS artificial satellites
. scientific satellites
. . Environmental Research Satellites
. . . **Intelsat satellite**
RT Earth ionosphere
lower atmosphere
magnetic fields
troposphere

Integ Med and Behavioral Lab Measur System
USE **IMBLMS**

Integ Program for Aerospace Veh Design
USE **IPAD**

Integers
DEF Whole numbers; numbers that are not a fraction.
GS number theory
. **integers**
real numbers
. **integers**
RT arithmetic
complex numbers
congruences
digits
∞ numbers

Integral calculus
GS analysis (mathematics)
. calculus
. . **integral calculus**
. real variables
. . measure and integration
. . . **integral calculus**
RT area
differential calculus
integrals
J integral
numerical integration
operational calculus

Integral equations
UF *integrodifferential equations*
GS analysis (mathematics)
. functional analysis
. . **integral equations**
. . . Fredholm equations
. . . J integral
. . . singular integral equations
. . . Volterra equations
. . . Wiener Hopf equations
RT asymptotic properties
calculus of variations
differential equations
distributed parameter systems
∞ equations
ill-conditioned problems (mathematics)
ill-posed problems (mathematics)
Mellin transforms
method of moments
nonlinear equations
Percus method
range (extremes)
Schmidt method
transport theory

integral functions
USE **entire functions**

Integral rocket ramjets
DEF A combination of a solid propellant rocket and a ramjet which uses the empty booster case as a ramjet combustor.
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . **integral rocket ramjets**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . **integral rocket ramjets**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . **integral rocket ramjets**
RT solid propellant rocket engines
turbine engines

Integral transformations
UF *transform integrals*
GS analysis (mathematics)
functional analysis
. . **integral transformations**
. . . Fourier transformation
. . . . fast Fourier transformations
. . . Fourier–Bessel transformations
. . . Hilbert transformation
. . . Laplace transformation
transformations (mathematics)
. **integral transformations**
. . Fourier transformation
. . . fast Fourier transformations
. . Fourier–Bessel transformations
. . Hilbert transformation
. . Laplace transformation
RT convolution integrals
Lighthill method
operators (mathematics)

Integrals
DEF Of or pertaining to an integer.
GS **integrals**
. convolution integrals
RT differential equations
functionals
integral calculus
∞ mathematics

Integrated circuits
DEF Combinations of interconnected circuit elements inseparably associated on or within continuous substrates. To further define the nature of integrated circuits, additional modifiers may be prefixed.
UF *monolithic circuits*
GS circuits
. **integrated circuits**
. . application specific integrated circuits
. . DTL integrated circuits
. . encapsulated microcircuits
. . large scale integration
. . linear integrated circuits
. . medium scale integration
. . TTL integrated circuits
. . very large scale integration
. . VHSIC (circuits)
RT burn-in
charge flow devices
chips (electronics)
chips (memory devices)
electronic packaging
hardware description languages
integrated optics
ion implantation
latch-up
microchannel plates
microminiaturization
microprocessors
microstrip devices
molecular electronics
optoelectronic devices
photomasks
printed circuits
thick films
thin films
transistor circuits

Integrated energy systems
DEF Community systems for energy generation and distribution.
RT communities
electric power plants
energy conversion
energy distribution
heating
∞ systems
total energy systems
utilities

Integrated global ocean station systems
UF *IGOSS*
RT data collection platforms
Global Atmospheric Research Program
ground stations
international cooperation
oceanographic parameters
∞ systems
weather stations

Integrated library systems
GS information systems
. **integrated library systems**
RT information dissemination

information management
information retrieval
libraries
on-line systems

Integrated Maneuvering Life Support Sys
USE **IMLSS**

Integrated mission control center
UF *IMCC (control center)*
GS stations
. ground stations
. . **Integrated mission control center**
RT ∞ control
Gemini project
ground based control
real time operation

Integrated optics
DEF Thin film devices containing tiny lenses, prisms, and switches to transmit very thin laser beams, which serve the same purposes as the manipulation of electrons in thin film devices of integrated electronics.
RT **electro-optics**
integrated circuits
Langmuir-Blodgett films
lenses
light transmission
monomolecular films
optical bistability
optical switching
optical waveguides
∞ optics
optoelectronic devices
thin films

integration (real variables)
USE **measure and integration**

Integrators
DEF In digital computers, devices for accomplishing a numeric approximation of the mathematical process of integration. Devices whose output is proportional to the integral of an input signal.
GS **integrators**
. digital integrators
RT circuits
differentiators
solions

Integrity
GS **integrity**
. computer program integrity
RT completeness
privacy
security
vulnerability

integrodifferential equations
USE **differential equations**
integral equations

Intel 8080 microprocessor
GS computer components
. microprocessors
. . **Intel 8080 microprocessor**
data processing equipment
. microprocessors
. . **Intel 8080 microprocessor**
RT computers

Intellect
GS intelligence
. **intellect**
RT artificial intelligence
inspiration
mental performance
psychology

Intellectual property
(added October 1995)
GS **intellectual property**
. copyrights
. patents
RT computer programs
inventions
law (jurisprudence)
legal liability
licensing
patent policy
procurement policy

Intelligence
GS **intelligence**
. artificial intelligence
. extraterrestrial intelligence
. intellect
RT cognitive psychology
intelligence tests
mental health
mental performance

Intelligence tests
(added September 1992)
RT human performance
intelligence
mental performance
personality tests
personnel selection
psychological tests
∞ tests

intelligent structures
USE **smart structures**

Intelligibility
GS **intelligibility**
. speech recognition
RT ambiguity
∞ coherence
communication theory
∞ interpretation
messages
orthography
phonemics
phonetics
psycholinguistics
scrambling (communication)

Intelsat satellites
GS artificial satellites
. communication satellites
. . **Intelsat satellites**

intensification
USE **amplification**

intensifier tubes
USE **Image intensifiers**

Intensifiers
GS **intensifiers**
. image intensifiers
. . image orthicons
RT amplifiers

∞ **intensity**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF In general, the degree or amount, usually expressed by the elemental time rate or spatial distribution of some condition or physical quantity, such as electric field, sound, magnetism, etc. With respect to electromagnetic radiation, a measure of the radiant flux per unit solid angle emanating from some source. Frequently, it is desirable to specify this as radiant intensity in order to distinguish it clearly from luminous intensity.
RT amplitudes
brightness
flux (rate)
flux density
level (quantity)
loudness
luminance
luminous intensity
magnitude
noise intensity
radiance
stellar magnitude

Interacting galaxies
(added November 1986)
UF *galaxy interaction*
GS celestial bodies
. galaxies
. . **interacting galaxies**
RT galactic structure
∞ interactions
retrograde orbits
ring galaxies
shell galaxies
stellar systems

Interactional aerodynamics
GS fluid mechanics
. fluid dynamics
. . gas dynamics
. . . **interactional aerodynamics**
RT airfoils
blade-vortex interaction
computational fluid dynamics
∞ flow
laminar boundary layer
rotor stator interactions
shock wave interaction

∞ **interactions**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT air land interactions
air sea ice interactions
air water interactions
atomic collisions
atomic interactions
beam interactions
blade-vortex interaction
configuration interaction
electromagnetic interactions
electron phonon interactions
electroweak interactions (field theory)
elementary particle interactions
fluid-solid interactions
gas-gas interactions
gas-ion interactions
gas-liquid interactions
gas-metal interactions
gas-solid interactions
high energy interactions
interacting galaxies
ion atom interactions
laser plasma interactions
laser target interactions
man environment interactions
meson-meson interactions
meson-nucleon interactions
molecular collisions
molecular interactions
nuclear capture
nuclear interactions
nuclear reactions
nucleon-nucleon interactions

particle interactions
particle theory
photon–electron interaction
plasma interaction experiment
plasma interactions
plasma–electromagnetic interaction
plasma–particle interactions
proton–proton reactions
shock wave interaction
solar terrestrial interactions
sound–sound interactions
spin–orbit interactions
strong interactions (field theory)
wave interaction
weak energy interactions
weak interactions (field theory)

Interactive control
DEF The sending of multiple commands that are selected on the basis of data received from an experiment in real time.
RT active control
∞ control
control theory
numerical control

Interactive graphics
USE **computer graphics**

Interactive multimedia
USE **multimedia**

Interatomic forces
RT atomic force microscopy
atomic structure
Van der Waals forces

Intercalation
DEF Production of layer type semiconducting as well as other conducting materials (also called synthetic metals).
GS stratification
. **intercalation**
RT ∞ chemical compounds
graphite
interlayers
∞ layers

Interception
RT **rendezvous**
spacecraft docking

Interceptor aircraft
USE **fighter aircraft**

∞ **Interceptors**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT fighter aircraft
satellite interceptors
YF–12 aircraft

Interconnection
USE **joining**

Intercontinental ballistic missiles
UF *ICBM (missiles)*
GS missiles
. ballistic missiles
. . **intercontinental ballistic missiles**
. . . Atlas ICBM
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
. . . Minuteman ICBM
. . . MX missile
. . . Titan ICBM
. . . . Titan 1 ICBM
. . . . Titan 2 ICBM
. surface to surface missiles
. . **intercontinental ballistic missiles**
. . . Atlas ICBM
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
. . . Minuteman ICBM
. . . MX missile
. . . Titan ICBM
. . . . Titan 1 ICBM
. . . . Titan 2 ICBM
RT **fleet ballistic missiles**
intermediate range ballistic missiles
Mark 1 reentry body
Mark 2 reentry body
Mark 3 reentry body
Mark 4 reentry body
Mark 5 reentry body
Mark 6 reentry body
Mark 11 reentry body
Mark 12 reentry body
Mark 17 reentry body
transoceanic systems

Intercosmos satellites
GS **artificial satellites**
. **geophysical satellites**
. . Cosmos satellites
. . . **intercosmos satellites**
. Soviet satellites
. . Cosmos satellites
. . . **intercosmos satellites**

Intercranial circulation
GS circulation
. blood circulation
. . **intercranial circulation**
RT cranium
skull

Interdigital transducers
GS transducers
. **interdigital transducers**
RT digital transducers
electroacoustic transducers
piezoelectric transducers
surface acoustic wave devices

Interface stability
GS stability
. **interface stability**
RT fluid boundaries
gas–solid interfaces
interfaces
liquid sloshing
liquid–liquid interfaces
liquid–solid interfaces
liquid–vapor interfaces
Taylor instability
ullage

Interfaces
DEF A common boundary between two parts of a system, whether material or non material. Specifically, in a rocket vehicle or other mechanical assembly, a common boundary between two components. Specifically, in fluid dynamics, a surface separating two fluids across which there is a discontinuity of some fluid property such as density or velocity or of some derivative of these properties in a direction normal to the interface. The equations of motion do not apply at the interface but are replaced by the boundary conditions.
GS **interfaces**
. fiber–matrix interfaces
. fluid boundaries
. . gas–solid interfaces
. . jet boundaries
. . liquid–liquid interfaces
. . liquid–solid interfaces
. . liquid–vapor interfaces
. graphical user interface
. . windows (computer programs)
. human–computer interface
. solid–solid interfaces
RT boundaries
coordination
data processing equipment
free boundaries
interface stability
management planning
project management
surface properties
surface reactions
∞ surfaces
telecommunication

Interfacial energy
RT adhesion
electron energy
∞ energy
fiber pullout
fiber–matrix interfaces
liquid–liquid interfaces
shear strength
surface energy

Interfacial strain
USE **interfacial tension**

Interfacial tension
DEF That property, due to molecular forces, that exists in the surface film of all liquids and tends to prevent the liquid from spreading. Used for interfacial strain and surface tension.
UF *interfacial strain*
surface tension
GS surface properties
. **interfacial tension**
RT capillary waves
gas–liquid interactions
Gibbs adsorption equation
globules
liquid bridges
liquid surfaces
liquid–liquid interfaces
Marangoni convection
mechanical properties
ripples
sliding
spreading
surface energy
surface stability
surface tension driven convection
∞ surfaces
tensile stress
∞ tension
tribology
vapor pressure
wetting

∞ **Interference**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aerodynamic interference
coherence coefficient
crosstalk
disrupting
electromagnetic compatibility
electromagnetic interference
hum
incompatibility
interference factor table
interference grating

intersymbolic interference
jamming
nonsynchronization
radio frequency interference
Ramsauer effect
support interference
wave diffraction
wave front deformation

Interference drag
GS aerodynamic characteristics
. **interference drag**
dynamic characteristics
. drag
. . pressure drag
. . . wave drag
. . . . **interference drag**
RT propeller slipstreams
supersonic drag
upwash

Interference factor table
GS tables (data)
. **interference factor table**
RT ∞ interference
modulation
multichannel communication

Interference fit
DEF The condition where the diameter of the fastener is larger than the hole that it is to fit in.
GS joints (junctions)
. **interference fit**
RT aircraft structures
fasteners
fatigue life
fitting
mechanical properties
stress analysis

Interference grating
RT fringe multiplication
∞ gratings
∞ interference
Moire effects
Moire fringes
radio filters
radio frequency interference

Interference immunity
RT electromagnetic interference
noise reduction
radio frequency interference
signal processing
signal to noise ratios

Interference lift
GS aerodynamic characteristics
. lift
. . **interference lift**
aerodynamic forces
. lift
. . **interference lift**
distribution (property)
. **interference lift**
dynamic characteristics
. lift
. . **interference lift**
RT upwash

Interference monochromatization
USE **diffraction**
monochromatization

Interferograms
USE **interferometry**

Interferometers
DEF Apparatus used to produce and measure interference from two or more coherent wave trains from the same source. Interferometers are used to measure wavelengths, to measure angular width of sources, to determine the angular position of sources (as in satellite tracking), and for many other purposes.
GS measuring instruments
. **interferometers**
. . **etalons**
. . Fabry–Perot interferometers
. . infrared interferometers
. . Mach–Zehnder interferometers
. . Michelson interferometers
. . microwave interferometers
. . phase switching interferometers
. . radio interferometers
RT astronomical interferometry
Bragg gratings
diffractometers
flatness
goniometers
optical equipment
optical measurement
optical measuring instruments
photogoniometers
Ronchi test
Sagnac effect
very long base interferometry

Interferometry
UF *Interferograms*
GS **interferometry**
. astronomical interferometry
. differential interferometry
. holographic interferometry
. laser interferometry
. Moire interferometry
. Ronchi test
. shearography
. speckle interferometry
. very long base interferometry
RT diffraction patterns
Fresnel diffraction
Fresnel reflectors
infrared interferometers
isochromatics
null zones
plasma flux measurement
Sagnac effect
scatter plates (optics)

Interferon
DEF A protein (lymphokine) released by cells in response to virus infection. When taken up by other cells, interferon inhibits the replication of viruses within them.
RT acquired immunodeficiency syndrome
bacteriophages
biochemistry
∞ biology
human immunodeficiency virus
physiological defenses
viruses

Intergalactic media
UF *extragalactic media*
GS **media**
. **intergalactic media**
RT cooling flows (astrophysics)
cosmic dust
cosmic gases
cosmic plasma
dark matter
galactic halos
mass distribution
stellar winds

Intergranular corrosion
DEF Corrosion that occurs preferentially at grain boundaries.
GS chemical attack
. **intergranular corrosion**
corrosion
. **intergranular corrosion**
RT grain boundaries
stress corrosion
transgranular corrosion

Interim stages (spacecraft)
GS **interim stages (spacecraft)**
. Inertial Upper Stage
RT multistage rocket vehicles
recoverable spacecraft
reusable spacecraft
space shuttles
stage separation

Interim upper stage (STS)
USE **Inertial Upper Stage**

Interior ballistics
DEF That branch of ballistics that deals with the propulsion of projectiles, i.e., the motion and behavior of projectiles in a gun barrel, the temperatures and pressures developed inside a gun barrel or rocket.
GS ballistics
. **interior ballistics**
RT propellant tests

Interlacing drainage
USE **drainage patterns**

Interlaminar stress
(added July 1992)
GS stresses
. **interlaminar stress**
RT composite materials
delaminating
interlayers
laminates
shear stress
stress distribution
stress–strain relationships

Interlayers
GS **interlayers**
. multilayer insulation
RT barrier layers
fabrics
insulation
intercalation
interlaminar stress
laminates
∞ layers
ply orientation
sandwich structures
∞ transition layers

Interlocking
USE **locking**

Intermedia
USE **multimedia**

Intermediate frequencies
DEF The beat frequencies used in heterodyne receivers, usually the difference between the received radiofrequency signal and a locally generated signal.
GS frequencies
. radio frequencies
. . **intermediate frequencies**
RT high frequencies

low frequencies

intermediate frequency amplifiers
GS amplifiers
. **intermediate frequency amplifiers**
RT beat frequencies
crystal filters
heterodyning
logarithmic receivers
preamplifiers
radio receivers
transistor amplifiers

intermediate range ballistic missiles
UF *IRBM (missiles)*
GS missiles
. ballistic missiles
. . **intermediate range ballistic missiles**
. . . Blue Streak missile
. . . Jupiter missile
. . . polaris missiles
. . . . Polaris A1 missile
. . . . Polaris A2 missile
. . . . Polaris A3 missile
. surface to surface missiles
. . **intermediate range ballistic missiles**
. . . Blue Streak missile
. . . Jupiter missile
. . . polaris missiles
. . . . Polaris A1 missile
. . . . Polaris A2 missile
. . . . Polaris A3 missile
RT field army ballistic missiles
fleet ballistic missiles
intercontinental ballistic missiles
Mark 1 reentry body
Mark 2 reentry body
Mark 3 reentry body
short range ballistic missiles

intermetallics
SN (COMPOUNDS CONSISTING OF ONLY METALLIC ELEMENTS)
UF *electron compounds*
RT alloying
alloys
aluminides
ammines
arsenides
borides
cluster variation method
indium gallium arsenides
inorganic compounds
metalloids
metals
nickel aluminides
phase diagrams
photoelectromagnetic effects
semiconductors (materials)
silicides
tellurides
titanium aluminides

intermittency
RT cycles
pulses
random processes

intermittency hypothesis
GS hypotheses
. **intermittency hypothesis**
RT photographic recording

intermodulation
DEF The modulation of the components of a complex wave by each other in a nonlinear system.
GS modulation
. **intermodulation**
RT demodulation
discriminators
frequency analyzers
frequency modulation
remodulation
sound-sound interactions
wave interaction

intermolecular forces
GS level (quantity)
. energy levels
. . molecular energy levels
. . . **intermolecular forces**
RT configuration interaction
excimers
Lennard-Jones potential
molecular interactions
molecular structure
Van der Waals forces
virial coefficients

intermontane floors
USE **valleys**

internal combustion engines
SN (EXCLUDES ROCKET ENGINES)
GS engines
. **internal combustion engines**
. . diesel engines
. . gas turbine engines
. . . hydrogen engines
. . . jet engines
. . . . ramjet engines
. . . . . integral rocket ramjets
. . . . . low volume ramjet engines
. . . . . pulsejet engines
. . . . . supersonic combustion ramjet engines
. . . . . turboramjet engines
. . . . turbojet engines
. . . . . Bristol-Siddeley Olympus 593 engine
. . . . . Bristol-Siddeley Viper engine
. . . . . ducted fan engines
. . . . . J-33 engine
. . . . . J-34 engine
. . . . . J-47 engine
. . . . . J-52 engine
. . . . . J-57 engine
. . . . . J-58 engine
. . . . . J-65 engine
. . . . . J-69-T-25 engine
. . . . . J-71 engine
. . . . . J-73 engine
. . . . . J-75 engine
. . . . . J-79 engine
. . . . . J-85 engine
. . . . . J-93 engine
. . . . . RA-28 engine
. . . . . turbofan engines
. . . . . Bristol-Siddeley BS 53 engine
. . . . . CF-700 engine
. . . . . convertible fan-shaft engines
. . . . . J-97 engine
. . . . . TF-30 engine
. . . . . TF-34 engine
. . . . . TF-41 engine
. . . . . turboprop engines
. . . . . T-34 engine
. . . . . T-38 engine
. . . . . T-53 engine
. . . . . T-55 engine
. . . . . T-56 engine
. . . . . T-63 engine
. . . . . T-64 engine
. . . . . T-74 engine
. . . . . T-76 engine
. . . . . T-78 engine
. . . . . turboramjet engines
. . . T-58 engine
. . helicopter engines
. . rotary engines
. . . Wankel engines
RT afterburning
aircraft engines
automobile engines
automobile fuels
∞ bearing
bearings
booster rocket engines
cams
carburetors
combustion
combustion chambers
diesel fuels
distributors
ducted rocket engines
electric hybrid vehicles
engine parts
engine primers
engine starters
exhaust systems
external combustion engines
fuel consumption
fuel injection
fuel pumps
fuel systems
gas turbines
hybrid propellant rocket engines
ignition systems
liquid propellant rocket engines
lubrication systems
piston engines
pistons
retrorocket engines
rocket engines
solid propellant rocket engines
spark plugs
superchargers
sustainer rocket engines
thermodynamic cycles
thermodynamic efficiency
torpedo engines
Vernier engines

internal compression inlets
GS intake systems
. **internal compression inlets**
RT air intakes
compressing
engine inlets
inlet nozzles
supersonic inlets

internal conversion
RT ∞ conversion
nuclear reactions

internal energy
DEF A mathematically defined thermodynamic function of state, interpretable through statistical mechanics as a measure of the molecular activity of the system.
RT chemical energy
∞ energy
free energy
Gibbs-Helmholtz equations

kinetic energy
∞ level
molecular energy levels
particle energy
potential energy
thermal energy
thermodynamics

internal flow
(added January 1995)
GS fluid flow
. **internal flow**
. . cavity flow
. . channel flow
. . . open channel flow
. . ducted flow
. . . Knudsen flow
. . inlet flow
. . nozzle flow
. . pipe flow
RT Couette flow
fluidics
hydrodynamics
pipes (tubes)

internal friction
GS friction
. **internal friction**
RT anelasticity
attenuation
cohesion
damping
density (mass/volume)
eddy viscosity
hysteresis
mechanical properties
∞ physical properties
plastic flow
viscosity

internal pressure
SN (LIMITED TO PRESSURE INSIDE A PORTION OF MATTER DUE TO ATTRACTION BETWEEN MOLECULES)
DEF The pressure inside a portion of matter due to the attraction between molecules.
GS pressure
. **internal pressure**
RT adhesion
cohesion
gas pressure
partial pressure
pressure distribution
spreading
temperature inversions

internal stress
USE **residual stress**

internal waves
DEF In fluid mechanics, **wave** motions of stably stratified fluids in which the maximal vertical motions occur below the surface of the fluids.
GS **internal waves**
. planetary waves
RT surface waves
∞ waves

International Cometary Explorer
USE **International Sun Earth Explorer 3**

International Computers Limited
USE **ICL computers**

international cooperation
GS policies
. foreign policy
. . international relations
. . . **international cooperation**
. . . . outer space treaty
RT A-300 aircraft
A-310 aircraft
A-320 aircraft
A-330 aircraft
A-340 aircraft
Anik 1
Anik 2
Anik 3
Anik satellites
Apollo Soyuz test project
Arabsat
Arcomsat
Azur satellite
Cassini mission
Cluster Mission
Committee on Space Research
Communications Technology Satellite
conventions
∞ cooperation
Cosmos 782 satellite
Cosmos 936 satellite
Cosmos 1129 satellite
disarmament
EISCAT radar system (Europe)
Energiya launch vehicle
ESA satellites
European Airbus
European Southern Observatory
federations
French space program
GLONASS
Granat satellite
information transfer
INMARSAT satellites
integrated global ocean station systems
International Hydrological Decade
International Satellite Geodesy Experiment
International Space Station
North Atlantic Treaty Organization (NATO)
Orbiting Frog Otolith
Palapa 2 satellite
Palapa satellites
peacetime
politics
Proton launch vehicle
ROSAT mission
Russian Space Program
sea law
SOHO Mission
sovereignty
Symphonie satellites
U.S.S.R. space program
United Nations
user requirements
Vega project
World Meteorological Organization

International Field Year for Great Lakes
RT Canada
Great Lakes (North America)
United States

International Geophysical Year
DEF By international agreement, a period during which greatly increased observation of worldwide geophysical phenomena is undertaken through the cooperative effort of participating nations. July 1957 to December 1958 was the first such year; however, precedent was set by the International Polar Years of 1882 and 1932. Used for IGY (geophysical year).
UF *IGY (geophysical year)*
RT geophysics
Vanguard satellites
world data centers

International Geosphere–Biosphere program
GS programs
. **International Geosphere–Biosphere program**
RT biogeochemistry
biosphere
Earth observations (from space)
geophysics
man environment interactions
solar terrestrial interactions

International Hydrological Decade
DEF A ten-year program, 1965–74, patterned after the International Geophysical Year, aimed at training hydrologists and technicians, and at the establishment of networks for measuring hydrologic data. The idea originated in the United States, but the program was sponsored by UNESCO, and a large proportion of membership of the United Nations participated. Used for IHD (hydrological decade).
UF *IHD (hydrological decade)*
RT Canada
foreign policy
hydrology
international cooperation
international relations
precipitation (meteorology)
river basins
streams
United States
water resources
watersheds

international law
GS law (jurisprudence)
. **international law**
. . air law
. . sea law
. . space law
RT conventions
legal liability
nations
outer space treaty
peacetime
politics
sovereignty
United Nations
warfare

International Magnetospheric Explorer
UF *IME satellite*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **International Magnetospheric Explorer**
RT Delta launch vehicle
Earth magnetosphere

International Magnetospheric Study
DEF Joint US, ESA, Japanese, and Canadian effort (1976–1979) for observation and measurement of magnetospheric and ionospheric phenomena and involving spacecraft, aircraft, balloons, and rockets, as well as ground based equipment. Used for IMS.
UF *IMS*
GS investigation
. **International Magnetospheric Study**
RT atmospheric physics
Earth magnetosphere
European space programs
geomagnetism
interplanetary magnetic fields

international practical temperature
USE **temperature scales**

International Quiet Sun Year
DEF An international cooperative program during 1964–65 of studying solar–terrestrial phenomena during a quiet sun, i.e., sunspot minimum, period. It is related to the International Geophysical Year and to the International Active Sun Years. Used for IQSY (international year)
UF *IQSY (international year)*
RT solar activity
solar cycles
solar physics

international relations
GS policies
. foreign policy
. . **international relations**
. . . international cooperation
. . . . outer space treaty
RT Apollo Soyuz test project
International Hydrological Decade
International Space Year
U.S.S.R. space program

International Satellite Cloud Climatology
USE **ISCCP Project**

International Satellite Geodesy Experiment
UF *ISAGEX*
RT celestial geodesy
European space programs
geodetic coordinates
international cooperation
satellite tracking
U.S.S.R. space program

International Sats for Ionospheric Study
USE **ISIS satellites**

International Solar Polar Mission
USE **Ulysses mission**

International Space Station
(added December 1994)
GS artificial satellites
. space stations
. . **international Space Station**
stations
. space stations
. . **international Space Station**
RT Assured Crew Return Vehicle
Columbus space station
international cooperation
Kvant modules
large space structures
manned orbital laboratories
Mir space station
Priroda module
space shuttles
Space Station Freedom
spaceborne experiments

International Space Year
(added April 1993)
UF *ISY*
RT∞ aerospace sciences
international relations
NASA space programs
space exploration
space programs

International Sun Earth Explorer 1
DEF First joint NASA–ESA satellite launched to investigate sun–Earth relationships and solar phenomena.
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . International Sun Earth Explorers
. . . . **International Sun Earth Explorer 1**

International Sun Earth Explorer 2
DEF Second joint NASA–ESA satellite launched to investigate sun–Earth relationships and solar phenomena.
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . International Sun Earth Explorers
. . . . **International Sun Earth Explorer 2**

International Sun Earth Explorer 3
DEF The last in a series of three spacecraft developed by NASA and ESA for the study of the magnetosphere. ISEE C was launched into a heliocentric orbit and will make observations in the solar wind up stream of the Earth. Used for International Cometary Explorer.
UF *International Cometary Explorer*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . International Sun Earth Explorers
. . . . **International Sun Earth Explorer 3**

International Sun Earth Explorers
UF *ISEE*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **International Sun Earth Explorers**
. . . . International Sun Earth Explorer 1
. . . . International Sun Earth Explorer 2
. . . . International Sun Earth Explorer 3

International System of Units
DEF The metric system of units based on the meter, kilogram, second, ampere, kelvin degree, and candela. Other SI units are hertz, radian, newton, joule, watt, coulomb, volt, ohm, farad, weber and tesla. Used for metric system and SI.
UF *metric system*
SI
GS units of measurement
. **International System of Units**
RT conversion tables
∞ measurement
measuring instruments
metrication
metrology
∞ systems

International trade
UF *exports*
foreign trade
RT economics
revenue

International Ultraviolet Explorer
USE **IUE**

Internet resources
(added January 1997)
SN (USE FOR SOURCES OF INFORMATION, DATA, OR COMPUTER SOFTWARE ACCESSIBLE VIA THE INTERNET; FOR DESIGN OR FUNCTIONAL ASPECTS OF COMPUTER INTERNETWORKS USE "INTERNETS")
DEF Sources of information, data, or computer software accessible via the Internet.
GS resources
. **Internet resources**
RT electronic bulletin boards
electronic mail
information dissemination
information resources management
information systems
internets
news media
services

internets
(added January 1994)
SN (REFERS TO ANY INTERLINKED SYSTEM OF SEPARATE COMPUTER NETWORKS)
GS networks
. communication networks
. . **internets**
. . . ARPA computer network
. . . World Wide Web
. computer networks
. . **internets**
. . . ARPA computer network
. . . World Wide Web
RT client server systems
electronic bulletin boards
electronic mail
Internet resources

internuclear properties
RT molecular interactions
∞ molecular physics

interorbital trajectories
GS trajectories
. **interorbital trajectories**
RT interplanetary trajectories
round trip trajectories
spacecraft trajectories

interpersonal relations
USE **human relations**

interphones
GS communication equipment
. **interphones**
RT earphones
microphones
telecommunications

interplanetary communication
GS telecommunication
. space communication
. . **interplanetary communication**
RT circumlunar communication
extraterrestrial communication
facsimile communication
lasers
lunar communication
optical communication
radio communication
satellite communication
spacecraft communication

interplanetary dust
GS extraterrestrial matter
. interstellar matter
. . cosmic dust
. . . **interplanetary dust**
. . . . meteoroid dust clouds
. . . . zodiacal dust
media
. interplanetary medium
. . **interplanetary dust**
. . . meteoroid dust clouds

. . . . zodiacal dust
particles
. dust
. . cosmic dust
. . . interplanetary dust
. . . . meteoroid dust clouds
. . . . . zodiacal dust
RT meteoroids
micrometeoroids

interplanetary Explorer
USE Explorer 18 satellite

interplanetary flight
UF *planetary space flight*
GS space flight
. interplanetary flight
RT asteroid missions
astrodynamics
Earth–Venus trajectories
flyby missions
interstellar spacecraft
long duration space flight
magnetic sails
manned Mars missions
manned space flight
Mariner Jupiter–Saturn flyby
Mariner Jupiter–Uranus flyby
Mariner Mark 2 Spacecraft
Mars exploration
matter–antimatter propulsion
negative matter propulsion
orbits
outer planets explorers
planetary landing
return to Earth space flight
round trip trajectories
space exploration
space navigation
spacecraft guidance
TOPS (spacecraft)

interplanetary gas
GS extraterrestrial matter
. cosmic gases
. . interplanetary gas
gases
. rarefied gases
. . cosmic gases
. . . interplanetary gas
media
. interplanetary medium
. . interplanetary gas
RT cosmic plasma
interstellar gas
neutral gases
solar wind

interplanetary magnetic fields
GS magnetic fields
. interplanetary magnetic fields
RT Chapman–Ferraro problem
flux transfer events
International Magnetospheric Study
magnetic clouds
magnetic field reconnection
solar magnetic field

interplanetary medium
GS media
. interplanetary medium
. . interplanetary dust
. . . meteoroid dust clouds
. . . . zodiacal dust
. interplanetary gas
RT magnetic clouds
mass distribution
meteoroids
plasma clouds
solar wind

Interplanetary Monitoring Platform
USE IMP

interplanetary navigation
GS navigation
. space navigation
. . interplanetary navigation
RT astronavigation
celestial navigation
celestial reference systems
radar navigation
radio navigation

interplanetary propulsion
USE interplanetary spacecraft
rocket engines

interplanetary space
UF *translunar space*
GS environments
. aerospace environments
. . deep space
. . . interplanetary space
. extraterrestrial environments
. . deep space
. . . interplanetary space
RT cislunar space
heliosphere
interstellar space
polar cusps

interplanetary spacecraft
UF *interplanetary propulsion*
planetary spacecraft
GS interplanetary spacecraft
. Explorer 18 satellite
. Jupiter probes
. . Galileo probe
. . Galileo spacecraft
. Mariner space probes
. . Mariner 1 space probe
. . Mariner 2 space probe
. . Mariner 3 space probe
. . Mariner 4 space probe
. . Mariner 5 space probe
. . Mariner 6 space probe
. . Mariner 7 space probe
. . Mariner 8 space probe
. . Mariner 9 space probe
. . Mariner 10 space probe
. . Mariner 11 space probe
. . Mariner R 2 space probe
. Mariner spacecraft
. . Mariner C spacecraft
. . Mariner Venus 67 spacecraft
. Mars probes
. . Advanced Reconn Electric Spacecraft
. . Mariner 3 space probe
. . Mariner 4 space probe
. . Mariner 6 space probe
. . Mariner 7 space probe
. . Mariner 8 space probe
. . Mariner 9 space probe
. . Mars 1 spacecraft
. . Mars 2 spacecraft
. . Mars 3 spacecraft
. . Mars 4 Spacecraft
. . Mars 5 spacecraft
. . Mars 6 spacecraft
. . Mars 7 spacecraft
. . Mars Observer
. . Mars Pathfinder
. . Viking 1975 entry vehicle
. . Viking spacecraft
. . . Viking 1 spacecraft
. . . . Viking lander 1
. . . . Viking orbiter 1
. . . Viking 2 spacecraft
. . . . Viking lander 2
. . . . Viking orbiter 2
. . . Viking lander spacecraft
. . . . Viking lander 1
. . . . Viking lander 2
. . . Viking orbiter spacecraft
. . . . Viking orbiter 1
. . . . Viking orbiter 2
. . . . Viking orbiter 1975
. . Zond 2 space probe
. Pioneer space probes
. . Pioneer 1 space probe
. . Pioneer 2 space probe
. . Pioneer 3 space probe
. . Pioneer 4 space probe
. . Pioneer 5 space probe
. . Pioneer 6 space probe
. . Pioneer 7 space probe
. . Pioneer 8 space probe
. . Pioneer 9 space probe
. . Pioneer 10 space probe
. . Pioneer 11 space probe
. . Pioneer Venus 2 entry probes
. . . Pioneer Venus 2 night probe
. . . Pioneer Venus 2 sounder probe
. Pioneer Venus spacecraft
. . Pioneer Venus 1 spacecraft
. . Pioneer Venus 2 spacecraft
. . . Pioneer Venus 2 entry probes
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
. . . Pioneer Venus 2 transporter bus
. TOPS (spacecraft)
. Venus probes
. . Magellan spacecraft (NASA)
. . Mariner 1 space probe
. . Mariner 2 space probe
. . Mariner 5 space probe
. . Mariner 10 space probe
. . Pioneer Venus 2 spacecraft
. . . Pioneer Venus 2 entry probes
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
. . . Pioneer Venus 2 transporter bus
. . Venera satellites
. . . Venera 2 satellite
. . . Venera 3 satellite
. . . Venera 4 satellite
. . . Venera 5 satellite
. . . Venera 6 satellite
. . . Venera 7 satellite
. . . Venera 8 satellite
. . . Venera 9 satellite
. . . Venera 10 satellite
. . . Venera 11 satellite
. . . Venera 12 satellite
. . Zond 1 space probe
. . Zond 3 space probe
. . Zond 4 space probe
. . Zond 5 space probe
. . Zond 6 space probe
. . Zond 7 space probe
. . Zond 8 space probe
. Voyager 1 spacecraft
. Voyager 2 spacecraft
. Zond space probes
. . Zond 1 space probe
. . Zond 2 space probe
. . Zond 3 space probe
. . Zond 4 space probe
. . Zond 5 space probe
. . Zond 6 space probe

. . Zond 7 space probe
. . Zond 8 space probe
RT artificial satellites
interstellar spacecraft
landing modules
maneuverable spacecraft
manned Mars missions
manned spacecraft
matter–antimatter propulsion
rendezvous spacecraft
reusable spacecraft
space capsules
space exploration
space probes
∞ spacecraft
unmanned spacecraft
Voyager 1977 mission

interplanetary trajectories
GS trajectories
. spacecraft trajectories
. . **interplanetary trajectories**
. . . Earth–Mars trajectories
. . . Earth–Mercury trajectories
. . . Earth–Venus trajectories
RT Earth–Moon trajectories
Goddard Trajectory Determination System
interorbital trajectories
orbital launching
orbital mechanics
parking orbits
planetary orbits
rendezvous trajectories
round trip trajectories
solar orbits
space navigation
spacecraft guidance
transfer orbits
Viking 1 spacecraft
Viking 2 spacecraft
Viking lander 1
Viking lander 2
Viking lander spacecraft
Viking orbiter 1
Viking orbiter 2
Viking orbiter spacecraft

interplanetary transfer orbits
GS orbits
. elliptical orbits
. . transfer orbits
. . . **interplanetary transfer orbits**
. spacecraft orbits
. . transfer orbits
. . . **interplanetary transfer orbits**
RT aeroassist
aerobraking
aerocapture
aeromaneuvering
low earth orbits
orbital mechanics
swingby technique

interpolation
GS analysis (mathematics)
. numerical analysis
. . **interpolation**
RT commutation
computation
extrapolation
finite difference theory
statistical analysis

interpolators
USE **repeaters**

∞ **interpretation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT decoding
intelligibility
perception
photointerpretation
reading
recognition
syntax
translating

interprocessor communication
DEF Communication between two or more processors in a computer system.
RT computer networks
computer systems design
Connection Machine
Dining Philosophers Problem
distributed memory
hypercube multiprocessors
local area networks
MIMD (computers)
multiprocessing (computers)
parallel processing (computers)
SIMD (computers)
transmission rate (communications)
transputers
VSAT (network)

interrelationships
USE **relationships**

interrogation
RT data processing
IFF systems (identification)
secondary radar
transmitter receivers
transponders

interruption
RT electric relays
packet switching
sequencing
switches
switching

intersections
SN (EXCLUDES BOOLEAN LOGICAL PRODUCTS)
DEF In Boolean algebra, the operation in which concepts are described by stating that they have all the characteristics of the classes involved. Intersection is expressed as AND.
RT crossings
crossovers
highways
∞ junctions
ramps (structures)
roads
streets
transportation networks

interservice data exchange program
UF *IDEP (data exchange)*
RT ∞ data
data retrieval
data storage
information retrieval
libraries
military technology
research

interstellar chemistry
DEF Molecular formation/dissociation in interstellar space due to radiation, collision, and other forces.
RT association reactions
chemical reactions
∞ chemistry
cosmochemistry
diffuse interstellar bands
formyl ions
interstellar matter
isotope ratios
molecular clouds
molecular interactions
reaction kinetics

interstellar communication
GS communicating
. **interstellar communication**
RT extraterrestrial intelligence
radio communication
space communication

interstellar extinction
UF *interstellar reddening*
GS extinction
. **interstellar extinction**
RT astrophysics
diffuse interstellar bands
evolution (development)
interstellar gas
radiation absorption
stellar evolution
stellar radiation

interstellar gas
GS extraterrestrial matter
. cosmic gases
. . **interstellar gas**
. interstellar matter
. . **interstellar gas**
gases
. rarefied gases
. . cosmic gases
. . . **interstellar gas**
RT cooling flows (astrophysics)
galactic halos
H I regions
H II regions
heliosphere
interplanetary gas
interstellar extinction
magnetic clouds
methylidyne
molecular clouds
neutral gases
Ophiuchi clouds
Orion nebula
spin temperature
star formation
stellar mass accretion
stellar winds

interstellar magnetic fields
UF *galactic magnetic fields*
GS magnetic fields
. **interstellar magnetic fields**
RT magnetic clouds
stellar magnetic fields

interstellar masers
GS stimulated emission devices
. masers
. . **interstellar masers**
RT coherent electromagnetic radiation
gas masers
lasers
microwave amplifiers
molecular clouds
radiation sources
stimulated emission
water masers

interstellar matter
GS extraterrestrial matter
. interstellar matter
. . cosmic dust
. . . interplanetary dust
. . . . meteoroid dust clouds
. . . . . zodiacal dust
. . dark matter
. . interstellar gas
RT celestial bodies
diffuse interstellar bands
formyl ions
gravitational instability
H I regions
H II regions
infrared cirrus (astronomy)
interstellar chemistry
mass distribution
metallicity
methylidyne
molecular clouds
nebulae
Ophiuchi clouds
Orion nebula
polycyclic aromatic hydrocarbons
reflection nebulae
spin temperature
star formation
stellar envelopes
stellar mass accretion

interstellar microwave spectra
USE **interstellar radiation**
microwave spectra

interstellar radiation
UF *interstellar microwave spectra*
GS extraterrestrial radiation
. interstellar radiation
RT corpuscular radiation
cosmic noise
cosmic rays
electromagnetic radiation
galactic radiation
gamma ray bursts
∞ radiation
radiative transfer
stellar radiation

interstellar reddening
USE **interstellar extinction**

interstellar space
GS environments
. aerospace environments
. . deep space
. . . interstellar space
. extraterrestrial environments
. . deep space
. . . interstellar space
RT interplanetary space

interstellar spacecraft
RT interplanetary flight
interplanetary spacecraft
interstellar travel
space exploration

interstellar travel
GS space flight
. interstellar travel
RT astronavigation
celestial reference systems
extraterrestrial intelligence
interstellar spacecraft
long duration space flight
magnetic sails
manned space flight
matter-antimatter propulsion
negative matter propulsion

interstices
RT cavities
cracks
grain boundaries
percolation
permeability
pinholes
porosity
porous materials
voids

interstitials
RT additives
antisite defects
crystal defects
crystal structure
grain boundaries

intersymbolic interference
RT data transmission
∞ interference
signal distortion
transmission efficiency

intertropical convergent zones
GS regions
. tropical regions
. . intertropical convergent zones
RT atmospheric circulation
fronts (meteorology)
GARP Atlantic Tropical Experiment
tropical meteorology
zonal flow (meteorology)

intervals
RT alternations
consecutive events
spacing
step functions
time
topology

intervehicle spacecrew transfer
USE **spacecrew transfer**

intervertebral disks
GS disks (shapes)
. intervertebral disks
RT ∞ disks
musculoskeletal system
vertebrae

intestines
GS anatomy
. digestive system
. . gastrointestinal system
. . . intestines
. . . . rectum
RT abdomen
appendix (anatomy)
colic

intoxication
RT ∞ poisoning
toxicity and safety hazard
toxicology

intracranial cavity
GS anatomy
. head (anatomy)
. . skull
. . . cranium
. . . . intracranial cavity
. musculoskeletal system
. . bones
. . . skull
. . . . cranium
. . . . . intracranial cavity

intracranial pressure
GS pressure
. intracranial pressure
RT brain

intramolecular structures
RT molecular structure
∞ structures

intraocular pressure
UF *tonometry*
GS pressure
. intraocular pressure
RT glaucoma

intraorbit transfer vehicles
DEF Small scooter type tugs that would move men and materials within an orbit.
RT Columbus space station
large space structures
space platforms
space shuttles
∞ vehicles

intravascular system
RT blood circulation
∞ systems

intravehicular activity
RT ∞ activity
astronaut locomotion
astronaut maneuvering equipment
astronaut performance
extravehicular activity
human performance
manned space flight
pilot performance
spacecraft environments
weightlessness

intravenous procedures
RT catheterization
medical services

introversion
RT ∞ depression
detachment
human behavior
∞ inhibition
psychology

intruder aircraft
USE **A-6 aircraft**

intrusion
RT contamination
extruding
leakage
seepage

invader aircraft
USE **B-26 aircraft**

invalidity
USE **errors**

invariance
GS **invariance**
. gauge invariance
RT ∞ constant
Lorentz transformations

invariant imbeddings
GS geometry
. topology
. . imbeddings (mathematics)
. . . invariant imbeddings
RT anisotropic fluids

calculus of variations
conformal mapping
coordinate transformations
differential geometry
∞ imbeddings
isotropic turbulence

inventions
RT **intellectual property**
patent applications
patent policy
patents
product development

inventories
GS **inventories**
. crop inventories
. timber inventory
RT **Large Area Crop Inventory Experiment**
reserves
∞ storage

inventory controls
GS **management**
. industrial management
. . inventory management
. . . **inventory controls**
. logistics management
. . inventory management
. . . **inventory controls**
RT ∞ control
distributing
mathematical models
optimal control
reserves
risk
∞ storage
time lag

inventory management
GS **management**
. industrial management
. . **inventory management**
. . . inventory controls
. logistics management
. . **inventory management**
. . . inventory controls
RT downtime
logistics
procurement management
resources
retirement for cause
services
spare parts
stockpiling
∞ storage

inverse kinematics
(added December 1990)
GS **kinematics**
. **inverse kinematics**
RT dynamic control
feedback control
manipulators
robot control
robot dynamics
robotics

inverse scattering
DEF Method for analyzing some classic wave scattering
GS **scattering**
. **inverse scattering**
RT forward scattering
resonance scattering

inversions
GS **inversions**
. magnetic field inversions
. population inversion
. temperature inversions

invertebrates
GS **animals**
. **invertebrates**
. . arthropods
. . . artemia
. . . crabs
. . . insects
. . . . bees
. . . . boliworms
. . . . chironomus flies
. . . . cockroaches
. . . . Coleoptera
. . . . . beetles
. . . . . tribolia
. . . . . boll weevils
. . . . crickets
. . . . Drosophila
. . . . fireflies
. . . . grasshoppers
. . . . locusts
. . . . moths
. . . . . silkworms
. . . spiders
. . molusks
. . . cephalopods
. . . . octopuses
. . . snails
. . Rotifera
. . sea urchins
. . worms
. . . flatworms
RT bacteria
hemocytes
larvae
microorganisms
poikilothermia

inverted converters (DC to AC)
RT **alternating current**
∞ converters
current converters (AC to DC)
direct current
electric current

inverters
SN (EXCLUDES AC TO DC INVERTERS)
GS **inverters**
. static inverters
RT attenuators
oscillators

investigation
UF *studies*
GS **investigation**
. accident investigation
. . aircraft accident investigation
. International Magnetospheric Study
RT examination
experimentation
exploration
geophysical fluid flow cells
OSS-1 payload
programs
research
research and development
sampling
university program

∞ **investment**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT commerce
investment casting
investments

investment casting
UF *lost wax process*
GS **forming techniques**
. casting
. . **investment casting**
RT centrifugal casting
∞ investment

investments
RT depreciation
economic impact
economics
finance
∞ investment

inviscid flow
UF *nonviscous flow*
GS **fluid flow**
. **inviscid flow**
. . stagnation flow
RT **aerodynamics**
Crocco method
Crocco–Lee theory
∞ flow
flow characteristics
gas flow
laminar flow
potential flow
Prandtl number
Reynolds number
stagnation temperature
turbulent flow
viscous flow

invisibility
USE **visibility**

involuntariness
USE **involuntary actions**

involuntary actions
UF *involuntariness*
RT autonomic nervous system
sneezing
spasms
twitching

Io
DEF A satellite of Jupiter orbiting at a mean distance of 421,800 kilometers. Also called Jupiter I.
GS **celestial bodies**
. **natural satellites**
. . **Jupiter satellites**
. . . **Galilean satellites**
. . . . **Io**
RT Callisto
Charon
Ganymede
Jupiter (planet)

iodates
GS **halogen compounds**
. iodine compounds
. . **iodates**
. . . lithium iodates

iodides
GS halogen compounds
. iodine compounds
. . **iodides**
. . . cesium iodides
. . . gallamine triethiodide
. . . hafnium iodides
. . . niobium iodides
. . . potassium iodides
. . . silver iodides

. . . sodium iodides
. . . zirconium iodides

Iodimetry
GS chemical tests
. chemical analysis
. . Iodimetry
RT quantitative analysis
∞ reduction
titration

Iodine
GS chemical elements
. halogens
. . Iodine
. . . iodine isotopes
. . . . Iodine 125
. . . . Iodine 131
. . . . Iodine 132

Iodine 125
GS chemical elements
. halogens
. . Iodine
. . . iodine isotopes
. . . . Iodine 125
. nuclides
. . isotopes
. . . iodine isotopes
. . . . Iodine 125
. . . radioactive isotopes
. . . . Iodine 125

Iodine 131
GS chemical elements
. halogens
. . Iodine
. . . iodine isotopes
. . . . Iodine 131
. nuclides
. . isotopes
. . . iodine isotopes
. . . . Iodine 131
. . . radioactive isotopes
. . . . Iodine 131

Iodine 132
GS chemical elements
. halogens
. . Iodine
. . . iodine isotopes
. . . . Iodine 132
. nuclides
. . isotopes
. . . iodine isotopes
. . . . Iodine 132
. . . radioactive isotopes
. . . . Iodine 132

Iodine compounds
GS halogen compounds
. Iodine compounds
. . Iodates
. . . lithium iodates
. . Iodides
. . . cesium iodides
. . . gallamine triethiodide
. . . hafnium iodides
. . . niobium iodides
. . . potassium iodides
. . . silver iodides
. . . sodium iodides
. . . zirconium iodides
. . Iodoacetic acid
RT ∞ chemical compounds
halocarbons

Iodine isotopes
GS chemical elements
. halogens
. . Iodine
. . . Iodine isotopes
. . . . Iodine 125
. . . . Iodine 131
. . . . Iodine 132
. nuclides
. . isotopes
. . . Iodine isotopes
. . . . Iodine 125
. . . . Iodine 131
. . . . Iodine 132

Iodine lasers
GS stimulated emission devices
. lasers
. . Iodine lasers
. . . chemical oxygen–iodine lasers

Iodoacetic acid
GS acids
. carboxylic acids
. . fatty acids
. . . acetic acid
. . . . Iodoacetic acid
halogen compounds
. Iodine compounds
. . Iodoacetic acid
organic compounds
. carboxylic acids
. . fatty acids
. . . acetic acid
. . . . Iodoacetic acid

Ion accelerators
GS particle accelerators
. Ion accelerators
RT ∞ accelerators
synchrotrons

Ion acoustic waves
GS elastic waves
. sound waves
. . Ion acoustic waves
RT plasma oscillations
plasma waves
wave propagation

Ion atom interactions
GS particle interactions
. Ion atom interactions
RT atomic interactions
charge exchange
elementary particle interactions
∞ interactions

Ion beams
DEF Directed fluxes of charged atoms or molecules.
GS beams (radiation)
. particle beams
. . Ion beams
ion currents
. Ion beams
RT atomic beams
beam injection
beam neutralization
inertial fusion (reactor)
molecular beams

Ion chambers
USE **Ionization chambers**

Ion charge
GS electric charge
. Ion charge
RT charge exchange
charged particles
ionization
valence

Ion concentration
RT acidity
∞ bases
Earth ionosphere
pH factor
titration

Ion currents
UF *Ionic conductivity*
GS Ion currents
. ion beams
RT solions

Ion cyclotron radiation
GS electromagnetic radiation
. nonthermal radiation
. . cyclotron radiation
. . . Ion cyclotron radiation
RT cyclotron resonance
ionic waves
magnetic pumping
plasma radiation
plasma waves
∞ radiation

Ion density (concentration)
DEF In atmospheric electricity, the number of ions per unit volume of a given sample of air; more particularly, the number of ions of a given type (positive small ion, negative small ion, positive large ion, or negative large ion) per unit volume of air.
GS density (number/volume)
. particle density (concentration)
. . Ion density (concentration)
. . . ionospheric ion density
. . . magnetospheric ion density
. . . . magnetospheric proton density
. . . proton density (concentration)
. . . . magnetospheric proton density
RT atmospheric density
atom concentration
cosmic rays
Earth ionosphere
electron density (concentration)
Gerdien condensers
ionization
ionograms
plasma density
positive ions
Saha equations
space density

Ion distribution
GS distribution (property)
. Ion distribution
RT charge distribution
current distribution
electrohydrodynamics
ionic mobility
spatial distribution
vertical distribution

Ion emission
GS emission
. particle emission
. . Ion emission
RT ionization
thermionic emission
thermionics

Ion engines
DEF Reaction engines in which ions, accelerated in an electrostatic field, are used as

propellants. Used for ionic propellants and thermionic reactors. Also called electrostatic engines. Used for ionic propellants and thermionic reactors.
UF *ionic propellants*
thermionic reactors
GS engines
. rocket engines
. . electric rocket engines
. . . ion engines
. . . . cesium engines
. . . . mercury ion engines
. . . . RIT engines
RT arc jet engines
beam switching
electrostatic engines
electrothermal engines
ionizers
nuclear rocket engines
plasma engines
restartable rocket engines
space station propulsion
sustainer rocket engines
∞ thrustors

ion exchange membrane electrolytes
GS conductors
. electrolytes
. . ion exchange membrane electrolytes
membranes
. ion exchange membrane electrolytes
RT fuel cells
separators

ion exchange resins
GS resins
. ion exchange resins
RT plastics
zeolites

ion exchanging
GS exchanging
. ion exchanging
RT beds (process engineering)
charge transfer
demineralizing
glass electrodes
hydrometallurgy
isotope separation
kaolinite
metathesis
∞ separation
softening
water treatment

ion extraction
GS extraction
. ion extraction
RT isotope separation
∞ separation
solvent extraction

ion gages
USE **ionization gages**

ion impact
GS impact
. ion impact
RT electron impact
point impact
recoil ions
toroids
Townsend avalancha
Townsend discharge

ion implantation
GS implantation
. ion implantation
RT avalanche diodes
carrier mobility
diodes
field effect transistors
integrated circuits
ions
ITO (semiconductors)
junction transistors
metal ions
metal oxide semiconductors
microelectronics
MODFETS
modulation doping
MOM (semiconductors)
photodiodes
semiconductor devices
transistors

ion injection
GS injection
. ion injection
RT carrier injection
ionic mobility
plasma accelerators
plasma generators
plasma jets

ion irradiation
GS irradiation
. ion irradiation
. . deuteron irradiation
. . proton irradiation
RT auroral irradiation
electron irradiation
ionic collisions
neutron irradiation

ion microscopes
GS microscopes
. ion microscopes
RT electron microscopes
electron microscopy
scanning electron microscopy
transmission electron microscopy

ion mobility spectroscopy
(added September 1995)
UF *plasma chromatography*
GS spectroscopy
. ion mobility spectroscopy
RT airport security
explosives detection
mass spectrometers

ion motion
RT ionic waves
∞ motion
Penning discharge
plasma composition
plasma diffusion

ion oscillation
USE **plasma oscillations**

ion plating
GS plating
. ion plating
RT ions
metal coatings
metal ions
sputtering
thin films
vacuum deposition

ion probes
GS measuring instruments
. ion probes
RT ionosondes
radio frequency impedance probes

ion production rates
GS ionization
. ion production rates
rates (per time)
. ion production rates
RT avalanches
charge exchange
recoil ions
thermionic converters

ion propulsion
GS propulsion
. electric propulsion
. . electrostatic propulsion
. . . ion propulsion
. low thrust propulsion
. . electrostatic propulsion
. . . ion propulsion
. spacecraft propulsion
. . electrostatic propulsion
. . . ion propulsion
RT duoplasmatrons
electromagnetic propulsion
high temperature propellants
magnetic sails
nuclear electric propulsion
plasma propulsion

ion pumps
GS pumps
. vacuum pumps
. . ion pumps
vacuum apparatus
. vacuum pumps
. . ion pumps
RT getters

ion recombination
GS chemical reactions
. ion recombination
recombination reactions
. ion recombination
RT atomic recombination
deionization
electron recombination
electron–ion recombination
recombination coefficient

ion scattering
GS scattering
. ion scattering
RT electron scattering
ionic collisions
ionic diffusion
proton scattering
recoil ions

ion selective electrodes
GS electrodes
. ion selective electrodes
RT chemical analysis

ion sheaths
GS sheaths
. ion sheaths
RT plasma clouds
plasma probes
plasma sheaths

ion sources
GS ion sources
. plasmatrons
. . duoplasmatrons
RT electron sources
ionization

ionizing radiation
linear accelerators
particle accelerators
plasma generators
radiation sources
∞ sources
sputtering

ion spectrometers
USE **mass spectrometers**

ion storage
DEF Ions within an electromagnetic trap and cooled to sub-Kelvin temperatures with lasers. Potential uses are for frequency standards.
RT frequency standards
∞ storage
trapping

ion stripping
DEF A procedure following the focusing of ion beams in the target chamber of a reactor to be used for particle beam pellet fusion.
RT heavy ions
particle beams
particle density (concentration)
particles
∞ separation
∞ stripping

ion temperature
GS temperature
. **ion temperature**
RT auroral temperature
ionospheric temperature
plasma temperature
space temperature
specific heat

ion traps (instrumentation)
GS measuring instruments
. **ion traps (instrumentation)**
traps
. **ion traps (instrumentation)**
RT radiation counters
vapor traps

ion-gas interactions
USE **gas-ion interactions**

ionic collisions
UF *heavy ion collisions*
GS collisions
. **ionic collisions**
RT atomic collisions
ion irradiation
ion scattering
particle collisions
recoil ions

ionic conductivity
USE **ion currents**

ionic crystals
GS crystals
. **ionic crystals**
RT chemical bonds
crystal lattices
excitons
polarons

ionic diffusion
GS diffusion
. particle diffusion
. . **ionic diffusion**
RT ambipolar diffusion
diffusion waves
electron diffusion
ion scattering
plasma diffusion
self diffusion (solid state)

ionic mobility
DEF In gaseous electric conduction, the average velocity with which a given ion drifts through a specified gas under the influence of an electric field of unit strength. Mobilities are commonly expressed in units of centimeters per second per volt per centimeter.
GS mobility
. **ionic mobility**
transport properties
. **ionic mobility**
RT ambipolar diffusion
anions
atomic mobilities
cations
electrohydrodynamics
electrolysis
electrolytic cells
electromigration
ion distribution
ion injection
ions
∞ motion
NDM semiconductor devices
negative ions
positive ions

ionic propellants
USE **ion engines**

ionic reactions
RT charge transfer
molecular interactions

ionic waves
GS elastic waves
. **ionic waves**
RT collisionless plasmas
electrostatic waves
ion cyclotron radiation
ion motion
ionospheric conductivity
ionospheric propagation
plasma waves
∞ waves

ionization
DEF The process by which electrons are lost from or transferred to neutral molecules or atoms to form positively or negatively charged particles. Used for electron ionization.
UF *electron ionization*
GS **ionization**
. autoionization
. gas ionization
. . atmospheric ionization
. . . auroral ionization
. . flame ionization
. ion production rates
. nonequilibrium ionization
. photoionization
. surface ionization
RT atomic collisions
atomic excitations
coronas
disintegration
dissociation
electric arcs
electric corona
electric discharges
electric sparks
electron attachment
excitation
ion charge
ion density (concentration)
ion emission
ion sources
ionospheric composition
magnetohydrodynamics
molecular excitation
oxygen recombination
Schwarzschild metric
single event upsets
stellar coronas
. thermal dissociation

ionization chambers
DEF Apparatus used to study the production of small ions in the atmosphere by cosmic rays and radioactive bombardment of air molecules.
UF *ion chambers*
GS **ionization chambers**
. bubble chambers
. cloud chambers
. Geiger counters
. proportional counters
. spark chambers
RT ∞ chambers
counters
dosimeters
electron counters
ionizers
neutron counters
radiation counters
radiation measuring instruments
threshold detectors (dosimeters)

ionization coefficients
GS coefficients
. **ionization coefficients**

ionization counters
USE **radiation counters**

ionization cross sections
RT absorption cross sections
∞ cross sections
nonadiabatic theory
scattering cross sections

ionization frequencies
GS frequencies
. **ionization frequencies**

ionization gages
DEF Vacuum gages with a means of ionizing the gas molecules and a means of correlating the number and type of ions produced with the pressure of the gas. Various types of ionization gages are distinguished according to the method of producing the ionization. Used for ion gages.
UF *ion gages*
GS measuring instruments
. pressure gages
. . vacuum gages
. . . **ionization gages**
. . . . alphatrons
. . . . Bayard-Alpert ionization gages
. . . . Penning gages
. . . . Philips ionization gages
vacuum apparatus
. vacuum gages
. . **ionization gages**
. . . alphatrons
. . . Bayard-Alpert ionization gages
. . . Penning gages
. . . Philips ionization gages
RT hot cathodes
Knudsen gages
Mcleod gages
orbitrons
Pirani gages

pressure measurement

ionization potentials
DEF The energy required to ionize an atom or molecule. The energy is usually given in terms of electron volts.
GS potential energy
. **ionization potentials**
RT activation
electric potential
nuclear binding energy
∞ potential
Saha equations
work functions

ionized gases
SN (LIMITED TO PARTIALLY IONIZED GASES; SEE PLASMAS (PHYSICS) FOR COMPLETELY IONIZED MATTER)
GS gases
. **ionized gases**
. . Lorentz gas
particles
. charged particles
. . **ionized gases**
. . . Lorentz gas
RT cosmic gases
electron gas
Fokker–Planck equation
gas ionization
gas temperature
H II regions
high temperature gases
neutral gases
plasmas (physics)
recombination coefficient

ionized plasmas
USE **plasmas (physics)**

ionizers
DEF Filaments, grids, or porous bodies in ion engines or other devices which strip electrons from the outer shells of neutral atoms to form positively charged ions.
RT∞ filaments
gas ionization
∞ grids
ion engines
ionization chambers
surface ionization
tube grids

ionizing radiation
DEF Any electromagnetic or particulate radiation capable of producing ions, directly or indirectly, in its passage through matter.
GS **ionizing radiation**
. alpha particles
. beta particles
. cosmic rays
. . cosmic ray showers
. . galactic cosmic rays
. . gamma ray bursts
. . primary cosmic rays
. . . solar cosmic rays
. . secondary cosmic rays
. gamma ray beams
. gamma rays
. . gamma ray bursts
. x rays
. . cosmic x rays
. . solar x-rays
RT absorption spectra
avalanches
beams (radiation)
coherent electromagnetic radiation
corpuscular radiation
electromagnetic radiation
electron beams
elementary particles
emission
extreme ultraviolet radiation
fluence
gamma ray absorption
gamma ray spectra
ion sources
irradiation
linear energy transfer (LET)
monochromatic radiation
nuclear radiation
particle trajectories
∞ radiation
radiation belts
radiation counters
radiation damage
radiation hazards
radioactive materials
radioactivity
radiochemistry
relativistic electron beams
solar radiation
sterilization
system generated electromagnetic pulses

ionograms
RT ion density (concentration)
ionosondes
riometers

ionopause
SN (EXCLUDES PLASMAPAUSE)
DEF The upper boundary of the ionosphere of certain planets (excluding the Earth) and comets where electrons decline sharply. The Earth's ionopause is referred to as the plasmapause. (Excludes plasmapause.)
RT cometary atmospheres
planetary atmospheres
plasmapause
space plasmas
Venus atmosphere

ionosondes
DEF An HF radar that sweeps or steps through all or part of the frequency range from 0.3 to 30 MHz (medium and hihg frequency band). Transmitting pulse modulated or continuous frequency variation signals with a vertical looking antenna, it measures the delay time of echos from the ionosphere as a function of frequency. Modern digital pulse ionosondes measure not only the amplitude, but also phase or Doppler frequency, polarization, and arrival angle of the echoes.
GS measuring instruments
. meteorological instruments
. . radiosondes
. . . **ionosondes**
. sondes
. . radiosondes
. . . **ionosondes**
radio equipment
. radio transmitters
. . radiosondes
. . . **ionosondes**
transmitters
. radio transmitters
. . radiosondes
. . . **ionosondes**
RT ion probes
ionograms
ionospheric sounding
riometers
satellite sounding
sounding rockets

Ionosphere Explorer A
USE **Explorer 20 satellite**

ionosphere–magnetosphere coupling
USE **magnetosphere–ionosphere coupling**

∞ **ionospheres**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED–CONSULT THE TERMS LISTED BELOW)
RT Earth ionosphere
magnetosphere–ionosphere coupling
planetary ionospheres

ionospheric absorption
USE **electromagnetic absorption**
ionospheric propagation

ionospheric blackout
USE **blackout (propagation)**

ionospheric composition
GS composition (property)
. atmospheric composition
. . **ionospheric composition**
RT atom concentration
chemical composition
gas composition
ionization
particle density (concentration)
plasma composition
satellite atmospheres

ionospheric conductivity
GS electrical properties
. electrical resistivity
. . **ionospheric conductivity**
transport properties
. atmospheric conductivity
. . **ionospheric conductivity**
. electrical resistivity
. . **ionospheric conductivity**
RT∞ conductivity
electrojets
ionic waves
plasma conductivity

ionospheric cross modulation
GS electromagnetic interference
. crosstalk
. . **ionospheric cross modulation**
. radio frequency interference
. . **ionospheric cross modulation**
modulation
. **ionospheric cross modulation**
RT Luxembourg effect

ionospheric currents
GS electric current
. **ionospheric currents**
. . Birkeland currents
. . **electrojets**
. . . auroral electrojets
. . . equatorial electrojet
electricity
. atmospheric electricity
. . **ionospheric currents**
. . . Birkeland currents
. . . **electrojets**
. . . . auroral electrojets
. . . . equatorial electrojet
RT field aligned currents
plasma currents
traveling ionospheric disturbances

ionospheric disturbances
GS **ionospheric disturbances**
. ionospheric storms

. . sudden ionospheric disturbances
. traveling ionospheric disturbances
RT Birkeland currents
blackout (propagation)
∞ disturbances
ionospheric noise
magnetic variations

ionospheric drift
RT∞ drift
drift rate
electrojets
magnetic rigidity
polarization (charge separation)
radiation belts

ionospheric electron density
GS density (number/volume)
. particle density (concentration)
. . electron density (concentration)
. . . **ionospheric electron density**
RT Ariel 4 satellite
magnetospheric electron density

ionospheric F-scatter propagation
GS scattering
. wave scattering
. . electromagnetic scattering
. . . **ionospheric F-scatter propagation**
transmission
. electromagnetic wave transmission
. . radio transmission
. . . ionospheric propagation
. . . . **ionospheric F-scatter propagation**
. . scatter propagation
. . . ionospheric F-scatter propagation
. signal transmission
. . radio transmission
. . . ionospheric propagation
. . . . **ionospheric F-scatter propagation**
. wave propagation
. . ionospheric propagation
. . . **ionospheric F-scatter propagation**
. . scatter propagation
. . . **ionospheric F-scatter propagation**

ionospheric heating
GS heating
. **ionospheric heating**
RT atmospheric radiation
plasma heating

ionospheric ion density
GS density (number/volume)
. particle density (concentration)
. . ion density (concentration)
. . . **ionospheric ion density**
RT magnetospheric ion density
positive ions

ionospheric noise
GS atmospheric radiation
. **ionospheric noise**
. . whistlers
electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . **ionospheric noise**
. . . . whistlers
RT background noise
background radiation
ionospheric disturbances
riometers
sky waves

ionospheric propagation
UF *ionospheric absorption*
ionospheric reflection
GS transmission
. electromagnetic wave transmission
. . radio transmission
. . . **ionospheric propagation**
. . . . ionospheric F-scatter propagation
. signal transmission
. . radio transmission
. . . **ionospheric propagation**
. . . . ionospheric F-scatter propagation
. wave propagation
. . **ionospheric propagation**
. . . ionospheric F-scatter propagation
RT antipodes
Earth ionosphere
Earth-ionosphere waveguide
EISCAT radar system (Europe)
ionic waves
lossy media
Luxembourg effect
magnetoionics
ORBIS
ORBIS CAL satellite
polar radio blackout
riometers
scatter propagation
signal measurement
traveling ionospheric disturbances

ionospheric reflection
USE **ionospheric propagation**

ionospheric sounding
GS sounding
. **ionospheric sounding**
RT Alouette 1 satellite
Alouette 2 satellite
Alouette project
Ariel 4 satellite
atmospheric sounding
ionosondes
ORBIS
ORBIS CAL satellite
rocket sounding
satellite sounding

ionospheric storms
DEF Disturbances of the ionosphere, resulting in anomalous variations in its characteristics and effects on radio communication.
GS ionospheric disturbances
. **ionospheric storms**
. . sudden ionospheric disturbances
storms
. **ionospheric storms**
. . sudden ionospheric disturbances
RT∞ disturbances
Earth ionosphere
ionospherics
noise storms
solar storms
spread F
traveling ionospheric disturbances

ionospheric temperature
GS temperature
. atmospheric temperature
. . **ionospheric temperature**
RT auroral temperature
electron energy
ion temperature

ionospheric tilts
DEF Ionospheric conditions where the variability of the number of the electrons as a function of altitude is present. Ionospheric tilts are sometimes created by traveling ionospheric disturbances (TID's) and ionospheric tilts deflect radio waves in unexpected directions adversely affecting radio reception.
RT traveling ionospheric disturbances

ionospherics
GS electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . atmospherics
. . . . **ionospherics**
. . . . . dawn chorus
. . . . . hiss
RT ionospheric storms
radio auroras

ions
DEF Charged atoms or molecularly bound groups of atoms; sometimes also free electrons or other charged subatomic particles. In atmospheric electricity, any of several types of electrically charged submicroscopic particles normally found in the atmosphere. Atmospheric ions are of two principal types, small ions and large ions, although a class of intermediate ions has occasionally been reported. In chemistry, atoms or specific groupings of atoms which have gained or lost one or more electrons, as the chloride ion or ammonium ion. Such ions exist in aqueous solutions and in certain crystal structures.
UF *multicharged ions*
GS **ions**
. cesium ions
. deuterons
. heavy ions
. helium ions
. hydrogen ions
. light ions
. metal ions
. . ferric ions
. . manganese ions
. molecular ions
. . formyl ions
. . hydronium ions
. . vanadyl radical
. negative ions
. . anions
. nitrogen ions
. oxygen ions
. positive ions
. . cations
. . . formyl ions
. . . vanadyl radical
. . hydronium ions
. recoil ions
. tritons
. trivalent ions
RT alpha particles
atoms
chemical elements
corpuscular radiation
electrolytes
free radicals
hydroxyl radicals
ion implantation
ion plating
ionic mobility
molecules
monatomic molecules
nuclei (nuclear physics)
particles
plasmas (physics)

polyatomic molecules
protons
valence

Iowa
GS nations
. United States
. . Iowa
RT Cedar Rapids (IA)
Missouri River (US)

IP (impact prediction)
USE **computerized simulation**

IPAD
SN (INTEGRATED PROGRAM FOR AEROSPACE VEHICLE DESIGN)
UF *Integ Program for Aerospace Veh Design*
GS computer techniques
. computer aided design
. . IPAD
spacecraft design
. IPAD
RT∞ design

IQSY (international year)
USE **International Quiet Sun Year**

IR lasers
USE **infrared lasers**

Iran
GS nations
. Iran
RT Asia

Iraq
GS nations
. Iraq
RT Asia

IRAS
USE **Infrared Astronomy Satellite**

IRAS–Araki–Alcock comet
DEF The closest known approaching comet to the Earth since 1770. It was the fourth comet discovered in 1983 and is named after its first three discoverers: The infrared astronomy satellite, Genichi Araki (a Japanese school teacher) and George Alcock (a veteran English amateur observer).
GS celestial bodies
. comets
. . IRAS–Araki–Alcock comet
RT Infrared Astronomy Satellite
solar system

irasers
USE **infrared lasers**

IRBM (missiles)
USE **intermediate range ballistic missiles**

Ireland
GS landforms
. islands
. . Ireland
nations
. Ireland

Iridescence
GS electromagnetic properties
. optical properties
. . color
. . . Iridescence
RT opalescence

Iridium
GS chemical elements
. Iridium
. . iridium isotopes
metals
. refractory metals
. . Iridium
. . . iridium isotopes
. transition metals
. . Iridium
. . . iridium isotopes
refractory materials
. refractory metals
. . Iridium
. . . iridium isotopes

Iridium alloys
(added July 1991)
GS alloys
. Iridium alloys
RT platinum alloys

Iridium compounds
(added July 1991)
RT∞ chemical compounds
Group 8 compounds
∞ metal compounds

Iridium isotopes
GS chemical elements
. iridium
. . Iridium isotopes
. nuclides
. . isotopes
. . . Iridium isotopes
metals
. refractory metals
. . iridium
. . . Iridium isotopes
. transition metals
. . iridium
. . . Iridium isotopes
refractory materials
. refractory metals
. . iridium
. . . Iridium isotopes

IRIS satellites
GS artificial satellites
. IRIS satellites
RT European space programs
satellite observation
solar activity
solar cycles
solar energy
solar flares
solar radiation
solar sensors

Irises (mechanical apertures)
GS openings
. apertures
. . Irises (mechanical apertures)
RT camera shutters
waveguide windows
waveguides

IRM
USE **information resources management**

Iron
GS chemical elements
. Iron
. . iron isotopes
. . . iron 57
. . . iron 58
. . . iron 59
metals
. transition metals
. . Iron
. . . iron isotopes
. . . . Iron 57
. . . . iron 58
. . . . iron 59
RT ferric ions
ferrous metals
hydrogen embrittlement
low carbon steels

Iron 57
GS chemical elements
. iron
. . iron isotopes
. . . Iron 57
. nuclides
. . isotopes
. . . iron isotopes
. . . . Iron 57
metals
. transition metals
. . iron
. . . iron isotopes
. . . . Iron 57

Iron 58
DEF A radioactive isotope of iron.
GS chemical elements
. iron
. . iron isotopes
. . . Iron 58
. nuclides
. . isotopes
. . . iron isotopes
. . . . Iron 58
metals
. transition metals
. . iron
. . . iron isotopes
. . . . Iron 58

Iron 59
GS chemical elements
. iron
. . iron isotopes
. . . Iron 58
. nuclides
. . isotopes
. . . iron isotopes
. . . . Iron 59
. . radioactive isotopes
. . . . Iron 59
metals
. transition metals
. . iron
. . . iron isotopes
. . . . Iron 59

Iron alloys
UF *ferroalloys*
GS alloys
. Iron alloys
. . steels
. . . bainitic steels
. . . carbon steels
. . . . low carbon steels
. . . chromium steels
. . . Croloy
. . . high strength steels
. . . . maraging steels
. . . nickel steels
. . . stainless steels
. . . . austenitic stainless steels
. . . . ferritic stainless steels
. . . . martensitic stainless steels
RT austenite
bainite
bearing alloys

cementite
ferrites
Hastelloy (trademark)
Inconel (trademark)
kamacite
martensite
nimonic alloys
pearlite
Permalloys (trademark)
silicon alloys
Zircaloys (trademark)

iron chlorides
GS **halogen compounds**
. chlorine compounds
. . chlorides
. . . **iron chlorides**
. **halides**
. . chlorides
. . . **iron chlorides**
. . **metal halides**
. . . **iron chlorides**
iron compounds
. **iron chlorides**

iron compounds
GS **iron compounds**
. cohenite
. cordierite
. fayalite
. ferrates
. . barium ferrates
. ferrites
. ferrocenes
. . alkylferrocene
. iron chlorides
. iron cyanides
. iron oxides
. . hematite
. . ilmenite
. . magnetite
. limonite
. pyrites
. pyrrhotite
. . troilite
. schreibersite
. siderites
RT ∞ chemical compounds
Group 8 compounds
∞ metal compounds

iron cyanides
GS cyanides
. **iron cyanides**
iron compounds
. **iron cyanides**

iron isotopes
GS chemical elements
. iron
. . **iron isotopes**
. . . iron 57
. . . iron 58
. . . iron 59
. **nuclides**
. . **isotopes**
. . . **iron isotopes**
. . . . iron 57
. . . . iron 58
. . . . iron 59
metals
. transition metals
. . iron
. . . **iron isotopes**
. . . . iron 57
. . . . iron 58
. . . . iron 59
RT ferrous metals

iron meteorites
UF *siderite meteorites*
GS celestial bodies
. meteorites
. . **iron meteorites**
. . . Arcos meteorite
. . . Lazarev meteorite
. . . Odessa meteorite
. . . Sikhote-Alin meteorite
RT achondrites
Harleton meteorite
kamacite
meteoritic composition
meteoritic microstructures
Okhansk meteorite
schreibersite
stony meteorites
stony-iron meteorites
troilite
Widmanstatten structure

iron ores
GS minerals
. **iron ores**
. . hematite

iron oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **iron oxides**
. . . . hematite
. . . . ilmenite
. . . . magnetite
iron compounds
. **iron oxides**
. . hematite
. . ilmenite
. . magnetite

Iroquois helicopter
USE **UH-1 helicopter**

irradiance
SN (LIMITED TO DETECTION RATE PER UNIT AREA OF RADIATION)
DEF The detection rate per unit area of radiation.
GS rates (per time)
. flux density
. . radiant flux density
. . . **irradiance**
. . . . illuminance
. . . . solar constant
RT electron flux density
luminance
luminous intensity
neutron flux density
proton flux density
radiance
Solar Backscatter UV Spectrometer
solar flux density

irradiation
GS **irradiation**
. auroral irradiation
. electron irradiation
. ion irradiation
. . deuteron irradiation
. . proton irradiation
. neutron irradiation
. x ray irradiation
RT activation
beams (radiation)
∞ bombardment
dosimeters
electromagnetic absorption
electron probes
emission
excitation
exposure
flux density
ionizing radiation
laser induced fluorescence
nuclear capture
nuclear fusion
nuclear radiation
preserving
∞ radiation
radiation dosage
radiation effects
radiation measurement
radiation tolerance
radiobiology
radiography
targets

irrationality
RT disorientation
dithers
mental performance
prejudices
psychoses
schizophrenia

irregular galaxies
DEF Galaxies with amorphous structure and with relatively low mass (10 to the 8th to 10 to the 10th solar masses). Fewer than 10 percent of all galaxies are classified as irregular.
GS celestial bodies
. galaxies
. . **irregular galaxies**
RT BL Lacertae objects
galactic radiation
galactic rotation
galactic structure
Gum nebula
Hubble constant
Hubble diagram
nebulae
Orion nebula
quasars
radio sources (astronomy)
red shift
star clusters
stars

irregular variable stars
GS celestial bodies
. stars
. . variable stars
. . . **irregular variable stars**
. . . . R Coronae Borealis stars
RT carbon stars
semiregular variable stars

irregularities
RT abnormalities
defects
deviation
nonuniformity
regularity

irreversible processes
RT nonequilibrium thermodynamics
Onsager relationship
reaction kinetics
thermodynamics
thermoviscoelasticity
variational principles

Irrigation
RT agriculture
alfalfa
barley
canals
citrus trees
corn
crop vigor
ditches
drainage
drainage patterns
farm crops
farmlands
oats
orchards
ponds
seepage
sugar beets
sugar cane
troughs
vegetation growth
vineyards
water consumption

Irritation
GS irritation
. toxicity and safety hazard
RT ∞ reaction

irrotational flow
USE potential flow

IRS (Indian spacecraft)
USE Indian spacecraft

ISAGEX
USE International Satellite Geodesy Experiment

ISCCP Project
(added August 1991)
UF *International Satellite Cloud Climatology*
GS programs
. projects
. . ISCCP Project
RT climatology
cloud cover
clouds (meteorology)
GOES satellites
METEOSAT satellite
remote sensing
satellite observation

Ischemia
RT anemias
blood circulation
congestion
vasoconstriction

ISEE
USE International Sun Earth Explorers

Isentrope
DEF A line of equal or constant pressure, with respect to either space or time.
RT adiabatic conditions
isentropic processes
Mollier diagram
Poisson equation

Isentropic processes
GS isentropic processes
. nonisentropicity
RT Bernoulli theorem
isentrope
isoenergetic processes
isopycnic processes
∞ processes
thermodynamic equilibrium

Ising model
RT antiferromagnetism
cluster variation method
crystal lattices
ferromagnetism
particle spin
phase transformations
statistical mechanics

ISIS satellites
SN (INTERNATIONAL SATELLITES FOR IONOSPHERIC STUDY)
UF *International Sats for Ionospheric Study*
GS artificial satellites
. ISIS satellites
. . Alouette 2 satellite
. . ISIS-A
. . ISIS-B
. . ISIS-X
RT Alouette satellites

ISIS-A
GS artificial satellites
. ISIS satellites
. . ISIS-A
RT Alouette project

ISIS-B
GS artificial satellites
. ISIS satellites
. . ISIS-B

ISIS-X
GS artificial satellites
. ISIS satellites
. . ISIS-X
RT Alouette B satellite

Iskra aircraft
USE TS-11 aircraft

Island arcs
GS landforms
. Island arcs
RT Aleutian Islands (US)
∞ arcs
barriers (landforms)
islands
keys (islands)
lagoons
reefs

Islands
DEF Tracts of land smaller than a continent, surrounded by the water of oceans, seas, lakes, or streams. The term has been loosely applied to land-tied and submerged areas, and to land cut off on two or more sides by water, such as peninsulas.
GS landforms
. Islands
. . Aleutian Islands (US)
. . Assateague Island (MD-VA)
. . atolls
. . Azores
. . Bahrain
. . Bermuda
. . Canary Islands
. . Cyprus
. . Greenland
. . Hawaii
. . Iceland
. . Indonesia
. . Ireland
. . keys (islands)
. . Long Island (NY)
. . Madagascar
. . Maldive Islands
. . Malta
. . Mauritius
. . Merritt Island (FL)
. . Newfoundland
. . nunataks
. . Pacific Islands
. . . Guam
. . . Japan
. . . Johnston Island
. . . Kurile Islands
. . . New Guinea (island)
. . . New Zealand
. . . Philippines
. . . Samoa
. . Prince Edward Island
. . Seychelles
. . Sicily
. . Tasmania
. . Wallops Island
. . West Indies
. . . Antigua and Barbuda
. . . Bahamas
. . . Barbados
. . . Cuba
. . . Dominica
. . . Grenada
. . . Guadeloupe
. . . Haiti
. . . Jamaica
. . . Lesser Antilles
. . . Martinique
. . . Puerto Rico
. . . Trinidad and Tobago
. . . Virgin Islands
RT archipelagoes
Cape Verde
coral reefs
island arcs
lagoons
Outer Banks (NC)
reefs
seamounts

∞ **Isobars**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT baroclinity
barotropism
isobars (pressure)
nuclear isobars
polytropic processes

Isobars (pressure)
DEF Lines of equal or constant pressure, specifically, such lines on a weather map.
RT atmospheric pressure
geostrophic wind
gradients
∞ isobars
isochoric processes
isopycnic processes
isothermal processes
meteorological charts
pressure
pressure distribution
pressure gradients

isobutane
USE butanes

isobutylene
USE butanes

Isochoric processes
RT isobars (pressure)
isopycnic processes
thermodynamic equilibrium
volume

Isochromatics
RT color
dichroism
diffraction
interferometry
refraction
speckle interferometry

Isocyanates
GS esters
. **Isocyanates**
. . diisocyanates
. . fulminates
nitrogen compounds
. cyano compounds
. . **Isocyanates**
. . . diisocyanates
. . . fulminates

Isoelectronic sequence
RT atomic structure
spectra
spectroscopy

Isoenergetic processes
RT adiabatic conditions
isentropic processes
thermodynamic equilibrium

Isolation
GS **Isolation**
. social isolation
RT confinement
confining
deprivation
disposal
exclusion
gnotobiotics
insulation
Isolators
∞ separation
spacing

Isolators
GS **Isolators**
. vibration isolators
RT attenuators
insulation
isolation
noise reduction
shock absorbers
spacers
suppressors
vibration

Isomerization
DEF Process for converting hydrocarbon or other organic compound to an isomer.
GS **Isomerization**
. ortho para conversion
RT ∞ conversion
refining

Isomers
DEF Nuclides having the same mass number A and atomic number Z, but existing for measurable times in different quantum states with different energies and radioactive properties. Molecules having the same atomic composition and molecular weight, but differing in geometrical configuration.
GS **Isomers**
. isopropyl alcohol
. phenanthrene
RT atoms
congeners
nuclear chemistry
stereochemistry
tautomers

Isomorphism
UF *morpholropism*
GS morphology
. **Isomorphism**
RT crystal lattices
crystal structure
duality theorem
homomorphisms

Isoparametric finite elements
DEF The basis for the calculation of physical properties of structural shapes including stress analyses.
RT conformal mapping
coordinate transformations
∞ elements
finite element method
fracture mechanics
numerical analysis
stress analysis

Isoperimetric problem
RT analytic functions
continuity (mathematics)
Lagrange multipliers
matrices (mathematics)
∞ problems
topology

Isophotes
RT ∞ illumination

Isopieths
USE **nomographs**

Isopropyl alcohol
GS hydroxyl compounds
. alcohols
. . **Isopropyl alcohol**
isomers
. **Isopropyl alcohol**
isopropyl compounds
. **Isopropyl alcohol**

Isopropyl compounds
GS **Isopropyl compounds**
. isopropyl alcohol
RT ∞ chemical compounds

Isopropyl nitrate
GS alkyl compounds
. **Isopropyl nitrate**
esters
. nitrate esters
. . **Isopropyl nitrate**
nitrogen compounds
. nitrate esters
. . **Isopropyl nitrate**

Isopycnic processes
UF *isosteric processes*
RT density (mass/volume)
isentropic processes
isobars (pressure)
isochoric processes

Isostasy
DEF A supposed equality existing in vertical sections of the Earth, whereby the weight of any column from the surface of the Earth to a constant depth is approximately the same as that of any other column of equal area, the equilibrium being maintained by plastic flow from one part of the Earth to another.
RT ∞ equilibrium
geomorphology
geophysics
glaciology
gravitation
hydrostatics
orography
seismology
subsidence

Isostatic pressure
GS pressure
. **Isostatic pressure**
RT atmospheric pressure
hot isostatic pressing
hydrostatic pressure
static pressure

Isosteric processes
USE **Isopycnic processes**

Isotensoid structures
DEF Filamentary structures in which the filaments are uniformly stressed throughout for the design loading conditions.
RT composite wrapping
filament winding
pressure vessels
prestressing
shells (structural forms)
spiral wrapping
∞ structures

Isothermal flow
GS fluid flow
. **Isothermal flow**
RT flow distribution
isotherms
temperature distribution

Isothermal layers
RT isotherms
laminar boundary layer
stratosphere
stratospheric warming
temperature distribution
temperature gradients
thermal mapping
tropopause

Isothermal processes
DEF Thermodynamic changes of state of a system that take place at constant temperature.
RT adiabatic conditions
isobars (pressure)
isotherms
thermodynamic equilibrium

Isotherms
DEF Lines connecting points of equal temperature.
RT Atmospheric & Oceanographic Inform Sys
atmospheric temperature
gradients
isothermal flow
isothermal layers
isothermal processes
meteorological parameters
meteorology
temperature
temperature distribution
temperature gradients
thermal mapping
thermodynamics

Isotonicity
RT body fluids
osmosis

Isotope abundance ratios
USE **Isotope ratios**

isotope effect
UF *isotope shift*
RT∞ **effects**
isotopes
radioactive isotopes

isotope ratios
(added March 1995)
UF *isotope abundance ratios*
isotopic analysis (quantitative)
GS composition (property)
. **isotope ratios**
ratios
. **isotope ratios**
RT **atmospheric composition**
cosmochemistry
geochemistry
geochronology
interstellar chemistry
meteoritic composition
stellar composition

isotope separation
RT **atoms**
heavy ions
ion exchanging
ion extraction
isotopes
jet membrane process

isotope shift
USE **isotope effect**

isotopes
DEF Different forms of the same chemical element that differ only by the number of neutrons in their nucleus. Most elements have more than one naturally occurring isotope.
GS chemical elements
. nuclides
. **isotopes**
. . aluminum isotopes
. . . aluminum 26
. . . aluminum 27
. . antimony isotopes
. . argon isotopes
. . arsenic isotopes
. . barium isotopes
. . beryllium isotopes
. . . beryllium 7
. . . beryllium 9
. . . beryllium 10
. . bismuth isotopes
. . boron isotopes
. . . boron 10
. . bromine isotopes
. . cadmium isotopes
. . calcium isotopes
. . carbon isotopes
. . . carbon 12
. . . carbon 13
. . . carbon 14
. . cerium isotopes
. . . cerium 137
. . . cerium 144
. . cesium isotopes
. . . cesium 133
. . . cesium 134
. . . cesium 137
. . . cesium 144
. . cesium vapor
. . chromium isotopes
. . cobalt isotopes
. . . cobalt 58
. . . cobalt 60
. . dysprosium isotopes
. . erbium isotopes
. . europium isotopes
. . fluorine isotopes
. . gadolinium isotopes
. . gallium isotopes
. . germanium isotopes
. . gold isotopes
. . . gold 198
. . hafnium isotopes
. . helium isotopes
. . holmium isotopes
. . hydrogen isotopes
. . . deuterium
. . . hydrogen 4
. . . metallic hydrogen
. . . tritium
. . iodine isotopes
. . . iodine 125
. . . iodine 131
. . . iodine 132
. . iridium isotopes
. . iron isotopes
. . . iron 57
. . . iron 58
. . . iron 59
. . krypton isotopes
. . . krypton 85
. . lanthanum isotopes
. . lead isotopes
. . lithium isotopes
. . lutetium
. . . lutetium isotopes
. . magnesium isotopes
. . manganese isotopes
. . mercury isotopes
. . molybdenum isotopes
. . neodymium isotopes
. . neon isotopes
. . nickel isotopes
. . niobium isotopes
. . . niobium 95
. . nitrogen isotopes
. . . nitrogen 15
. . . nitrogen 16
. . nobelium isotopes
. . osmium isotopes
. . oxygen isotopes
. . . oxygen 17
. . . oxygen 18
. . palladium isotopes
. . phosphorus isotopes
. . . phosphorus 32
. . platinum isotopes
. . polonium isotopes
. . . polonium 208
. . . polonium 209
. . . polonium 210
. . potassium isotopes
. . . potassium 38
. . . potassium 39
. . . potassium 40
. . praseodymium isotopes
. . promethium isotopes
. . protactinium isotopes
. . radioactive isotopes
. . . astatine isotopes
. . . beryllium 7
. . . beryllium 9
. . . beryllium 10
. . . carbon 14
. . . cerium 137
. . . cerium 144
. . . cesium 134
. . . cesium 137
. . . cesium 144
. . . cobalt 58
. . . cobalt 60
. . . copper isotopes
. . . gold 198
. . . indium isotopes
. . . iodine 125
. . . iodine 131
. . . iodine 132
. . . iron 59
. . . krypton 85
. . . niobium 95
. . . nitrogen 16
. . . phosphorus 32
. . . polonium 208
. . . polonium 209
. . . polonium 210
. . . potassium 38
. . . potassium 40
. . . rubidium 86
. . . sodium 22
. . . sodium 24
. . . strontium 85
. . . strontium 88
. . . strontium 89
. . . strontium 90
. . . transuranium elements
. . . . americium
. . . . . americium isotopes
. . . . . americium 241
. . . . berkelium
. . . . californium
. . . . . californium isotopes
. . . . curium
. . . . . curium isotopes
. . . . . curium 242
. . . . . curium 244
. . . . einsteinium
. . . . fermium
. . . . lawrencium
. . . . mendelevium
. . . . neptunium
. . . . . neptunium isotopes
. . . . nobelium
. . . . plutonium
. . . . . plutonium isotopes
. . . . . plutonium 238
. . . . . plutonium 239
. . . . . plutonium 240
. . . . . plutonium 241
. . . . . plutonium 244
. . . . seaborgium
. . . tritium
. . . uranium 232
. . . uranium 233
. . . uranium 238
. . . xenon 133
. . . xenon 135
. . . zirconium 95
. . radium isotopes
. . . radium 226
. . radon isotopes
. . rhenium isotopes
. . rhodium isotopes
. . rubidium isotopes
. . . rubidium 86
. . ruthenium isotopes
. . samarium isotopes
. . scandium isotopes
. . selenium isotopes
. . silicon isotopes
. . silver isotopes
. . sodium isotopes
. . . sodium 22
. . . sodium 24
. . strontium isotopes
. . . strontium 85
. . . strontium 87
. . . strontium 89

. . . . strontium 90
. . . sulfur isotopes
. . . tantalum isotopes
. . . technetium isotopes
. . . tellurium
. . . . tellurium isotopes
. . . terbium isotopes
. . . thallium isotopes
. . . thorium isotopes
. . . thulium isotopes
. . . tin isotopes
. . . titanium isotopes
. . . tungsten isotopes
. . . uranium isotopes
. . . . uranium 232
. . . . uranium 233
. . . . uranium 234
. . . . uranium 235
. . . . uranium 238
. . . vanadium isotopes
. . . xenon isotopes
. . . . xenon 129
. . . . xenon 133
. . . . xenon 135
. . . ytterbium isotopes
. . . yttrium isotopes
. . . zinc isotopes
. . . zirconium isotopes
. . . . zirconium 95
RT atoms
heavy ions
isotope effect
isotope separation
isotopic enrichment
isotopic labeling
jet membrane process
metals
nuclear isobars
nuclei (nuclear physics)
radioactive materials

isotopic analysis (quantitative)
USE **isotope ratios**

isotopic enrichment
DEF Process by which the relative abundance of the isotopes of a given element are altered in a batch to produce a form of the element enriched in a particular isotope.
GS enrichment
. **isotopic enrichment**
. . jet membrane process
RT beneficiation
chemical elements
∞ concentration
isotopes
nuclides

isotopic labeling
GS marking
. **isotopic labeling**
RT chemical analysis
isotopes
radioactive isotopes
radiochemistry
trace elements
∞ tracers

isotopic spin
GS spin
. particle spin
. . **isotopic spin**

isotropic media
GS isotropy
. **isotropic media**
RT anisotropic media

isotropic turbulence
DEF Turbulence in which the products and squares of the velocity components and their derivatives are independent of direction, or, more precisely, invariant with respect to rotation and reflection of the coordinate axes in a coordinate system moving with the mean motion of the fluid.
GS turbulence
. **isotropic turbulence**
RT atmospheric turbulence
coordinate transformations
homogeneous turbulence
instrument receivers
invariant imbeddings
Kolmogorov theory
magnetohydrodynamic turbulence
turbulent flow

isotropism
RT refractivity
symmetry

isotropy
DEF Having the same properties in all directions. Used for spatial isotropy.
UF *spatial isotropy*
GS **isotropy**
. isotropic media
RT anisotropic fluids
anisotropy
Bragg angle
crystal structure
crystallography
crystals
dendritic crystals
directivity
field strength
mechanical properties
metallography
optical properties
∞ orientation
∞ physical properties

Israel
GS nations
. **Israel**
RT Asia
Israeli space program
Israeli spacecraft

Israeli space program
(added March 1989)
GS programs
. space programs
. . **Israeli space program**
RT Israel
Israeli spacecraft

Israeli spacecraft
(added May 1993)
RT Israel
Israeli space program
∞ spacecraft

ISRO
UF *Indian Space Research Organization*
GS organizations
. **ISRO**
RT India
space programs

isthmuses
DEF Narrow strips or necks of land, bordering on both sides by water, connecting two larger land areas, such as peninsulas and the mainland or two continents (Isthmus of Panama).
GS land
. **isthmuses**
landforms
. **isthmuses**
RT geology
oceanography
peninsulas
topography
water

ISY
USE **International Space Year**

Italian space program
GS programs
. space programs
. . European space programs
. . . **Italian space program**
RT Italy
Orbiting Frog Otolith
SIRIO satellite

Italy
GS nations
. **Italy**
RT Adriatic Sea
Alps Mountains (Europe)
Europe
Italian space program
San Marino
Sicily
SIRIO satellite
Vatican City

itching
RT contact dermatitis
dermatitis
histamines
sensitivity
sensory perception

iteration
GS analysis (mathematics)
. numerical analysis
. . **iteration**
. . . conjugate gradient method
. . . iterative solution
. . . Newton methods
. . . . Newton–Raphson method
. . . predictor–corrector methods
RT multigrid methods
probability theory
problem solving

iterative networks
GS circuits
. **iterative networks**
networks
. **iterative networks**
RT impedance matching

iterative solution
GS analysis (mathematics)
. numerical analysis
. . iteration
. . . **iterative solution**
problem solving
. **iterative solution**
RT asymptotic methods
Cholesky factorization
conjugate gradient method
finite element method
ill-posed problems (mathematics)
multigrid methods
Newton methods
predictor–corrector methods
sorting algorithms
strange attractors

ITO (semiconductors)
DEF Semiconductor devices consisting of a layer of tin sandwiched between an indium layer and an oxide layer. Used for indium–tin–oxide semiconductors.
UF *indium–tin–oxide semiconductors*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . metal oxide semiconductors
. . . . **ITO (semiconductors)**
semiconductors (materials)
. metal oxide semiconductors
. . **ITO (semiconductors)**
RT charge coupled devices
charge transfer devices
CMOS
heterojunction devices
ion implantation
rectifiers
SOS (semiconductors)

ITOS 1
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . ITOS satellites
. . . . **ITOS 1**
RT TIROS M
TIROS N series satellites
TIROS operational satellite system

ITOS 2
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . ITOS satellites
. . . . **ITOS 2**
RT TIROS M
TIROS N series satellites
TIROS operational satellite system

ITOS 3
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . ITOS satellites
. . . . **ITOS 3**
RT TIROS M
TIROS N series satellites
TIROS operational satellite system

ITOS 4
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . ITOS satellites
. . . . **ITOS 4**
RT TIROS M
TIROS N series satellites
TIROS operational satellite system

ITOS satellites
(added August 1990)
DEF Second generation, polar orbiting, environmental satellite used to augment NOAA's world–wide weather observation capabilities.
UF *Improved TIROS Operational Satellites*
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **ITOS satellites**
. . . . ITOS 1
. . . . ITOS 2
. . . . ITOS 3
. . . . ITOS 4
RT TIROS M
TIROS N series satellites

IUE
UF *International Ultraviolet Explorer*
SAS–D
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **IUE**
observatories
. astronomical observatories
. . astronomical satellites
. . . **IUE**
RT Explorer satellites
Extreme Ultraviolet Explorer satellite
radio astronomy
spaceborne astronomy
ultraviolet radiation

IUS
USE **Inertial Upper Stage**

Ivory Coast
USE **Cote d'Ivoire**

Ivuna meteorite
GS celestial bodies
. meteorites
. . stony meteorites
. . . carbonaceous meteorites
. . . . carbonaceous chondrites
. . . . . **Ivuna meteorite**
. . . chondrites
. . . . carbonaceous chondrites
. . . . . **Ivuna meteorite**

Izsak ellipsoid
USE **ellipsoids**
geodesy

J

J integral
DEF A contour energy integral formulated by Rice and used for evaluating fracture toughness of elastoplastic materials.
GS analysis (mathematics)
. functional analysis
. . integral equations
. . . J integral
. real variables
. . measure and integration
. . . J integral
RT crack initiation
crack propagation
cracking (fracturing)
creep rupture strength
elastoplasticity
fracture mechanics
fracture strength
integral calculus
mechanical properties
plastic deformation
structural analysis
toughness
yield strength

J-2 engine
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . hydrogen oxygen engines
. . . . J-2 engine
RT Nova launch vehicles
Saturn 1B launch vehicles
Saturn 5 launch vehicles

J-33 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-33 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-33 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-33 engine
. turbomachinery
. . J-33 engine
RT Mace missiles

J-34 engine
UF *XJ-34-WE-32 engine*
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-34 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-34 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-34 engine

J-47 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-47 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-47 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-47 engine

J-52 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-52 engine
. aircraft engines
. . J-52 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-52 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-52 engine

J-57 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-57 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-57 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-57 engine
RT afterburning

J-58 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-58 engine
. aircraft engines
. . J-58 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-58 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-58 engine

J-65 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-65 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-65 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-65 engine
RT A-4 aircraft

J-69-T-25 engine
UF *Marboré 2 engine*
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-69-T-25 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-69-T-25 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-69-T-25 engine

J-71 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-71 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-71 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-71 engine

J-73 engine
UF *YJ-73-GE-3 engine*
YJ73 turbojet engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-73 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-73 engine
. turbine engines

. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-73 engine

J-75 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-75 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-75 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-75 engine

J-79 engine
UF *XJ-79-GE-1 engine*
YJ-79 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-79 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-79 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-79 engine
RT F-4 aircraft

J-85 engine
UF *YJ-85 engine*
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-85 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-85 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-85 engine
RT Blue Goose missile
Osprey missile

J-93 engine
UF *J93-MJ252H engine*
J93-MJ280G engine
YJ-93 engine
YJ-93-GE-3 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-93 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-93 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . J-93 engine

J-97 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . J-97 engine
. aircraft engines
. . J-97 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . J-97 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . J-97 engine

J93-MJ252H engine
USE **J-93 engine**

J93-MJ280G engine
USE **J-93 engine**

Jabiru rocket vehicle
USE **Jaguar rocket vehicle**

jackets
SN (EXCLUDES CLOTHING)
DEF Coverings or casings of some kind. Specifically, a shell around the combustion chamber of a liquid fuel rocket, through which the propellant is circulated in regenerative cooling. Coatings of one material over another to prevent damage such as oxidation or micrometeroid penetration.
RT absorbers (materials)
∞ casing
cooling
coverings
heating
insulation
linings
sheaths

jacking equipment
USE **jacks (lifts)**

∞ **jacks**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT electric connectors
elevators (lifts)
jacks (lifts)

jacks (electrical)
USE **electric connectors**

jacks (lifts)
UF *jacking equipment*
RT ∞ jacks
∞ lifts
positioning devices (machinery)
tunneling (excavation)

Jacobi integral
GS analysis (mathematics)
. real variables
. . Jacobi integral
RT conformal mapping
diffusion theory
elliptic functions
Green's functions
potential theory
Weierstrass functions

Jacobi matrix method
GS analysis (mathematics)
. real variables
. . Jacobi matrix method
RT calculus of variations
eigenvalues
eigenvectors
Hermitian polynomial
∞ methodology

Jacobi polynomials
USE **hypergeometric functions**

Jaguar aircraft
GS attack aircraft
. fighter aircraft
. . Jaguar aircraft
single engine aircraft
. Jaguar aircraft
supersonic aircraft
. Jaguar aircraft
RT ∞ aircraft
Breguet aircraft
∞ military aircraft

Jaguar rocket vehicle
UF *Jabiru rocket vehicle*
GS rocket vehicles
. multistage rocket vehicles
. . Jaguar rocket vehicle
. sounding rockets
. . Jaguar rocket vehicle
RT solid propellant rocket engines

Jahn-Teller effect
DEF The effect whereby, except for linear molecules, degenerate orbital states in molecules are unstable.
RT ∞ effects
electron paramagnetic resonance
electron transitions
orbitals

Jamaica
GS landforms
. islands
. . West Indies
. . . Jamaica
nations
. Jamaica
RT Caribbean region

jammers
RT air defense
jamming
radar equipment
radio equipment

jamming
DEF Intentional transmission or reradiation of radio signals in such a way as to interfere with reception of desired signals by the intended receiver.
GS countermeasures
. jamming
electromagnetic interference
. jamming
RT clutter

electronic countermeasures
electronic warfare
frequency hopping
∞ interference
jammers
radio frequency interference
white noise

Janus
DEF One of the natural satellites of Saturn.
GS celestial bodies
. natural satellites
. . Saturn satellites
. . . Janus
RT Saturn (planet)

Janus Reactor
GS nuclear reactors
. nuclear research and test reactors
. . Janus Reactor

Janus spacecraft
GS gliders
. Janus spacecraft
lifting bodies
. lifting reentry vehicles
. . Janus spacecraft
maneuverable spacecraft
. Janus spacecraft
manned spacecraft
. Janus spacecraft
reentry vehicles
. maneuverable reentry bodies
. . lifting reentry vehicles
. . . Janus spacecraft
soft landing spacecraft
. Janus spacecraft

Japan
GS landforms
. islands
. . Pacific islands
. . . Japan
nations
. Japan
RT Asia
Japanese space program
Japanese spacecraft

Japanese space program
GS programs
. space programs
. . Japanese space program
RT Ginga satellite
HOPE aerospace plane
Japan
Japanese spacecraft
meteorological satellites
∞ research projects
satellite design
space missions
space transportation
∞ spacecraft
spacecraft design
Tenma satellite

Japanese spacecraft
DEF Spacecraft operated by the Japanese government. Used for MOS (Japanese spacecraft).
UF *MOS (Japanese spacecraft)*
GS Japanese spacecraft
. EXOS satellites
. . EXOS-A satellite
. . EXOS-B satellite
. . EXOS-C satellite
. . EXOS-D satellite
. Engineering Test Satellites
. Ginga satellite
. Tenma satellite
RT Japan
Japanese space program
∞ spacecraft

jarring
USE mechanical shock

JAS-39 aircraft
(added June 1995)
UF *Gripen aircraft*
GS attack aircraft
. fighter aircraft
. . JAS-39 aircraft
RT ∞ aircraft
canard configurations
Sweden

JATO engines
UF *jet assisted takeoff*
GS engines
. JATO engines
launchers
. aircraft launching devices
. . JATO engines
RT short takeoff aircraft
solid propellant rocket engines
takeoff

Javelin aircraft
USE GA-5 aircraft

Javelin rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . Javelin rocket vehicle
RT Argo rocket vehicles
rocket propelled sleds
solid propellant rocket engines
sounding rockets

Jayhawk helicopter
USE H-60 Helicopter

JC-130 aircraft
USE C-130 aircraft

Jeans theory
RT gravitational instability
∞ theories

jeeps
USE automobiles

jerboas
GS animals
. vertebrates
. . mammals
. . . rodents
. . . . mice
. . . . . jerboas

jet aircraft
UF *jet flight*
turbojet aircraft
GS jet aircraft
. A-2 aircraft
. A-3 aircraft
. A-4 aircraft
. A-5 aircraft
. A-6 aircraft
. Alpha jet aircraft
. AVRO 707 aircraft
. B-1 aircraft
. B-2 aircraft
. B-47 aircraft
. B-52 aircraft
. B-57 aircraft
. B-58 aircraft
. B-66 aircraft
. B-70 aircraft
. Boeing 747 aircraft
. Boeing 777 aircraft
. Boeing 2707 aircraft
. Buccaneer aircraft
. C-5 aircraft
. C-8A augmentor wing aircraft
. C-9 aircraft
. C-135 aircraft
. C-140 aircraft
. Canberra aircraft
. CL-41 aircraft
. CL-823 aircraft
. Comet 4 aircraft
. CV-880 aircraft
. D-558 aircraft
. DC 9 aircraft
. DC 10 aircraft
. DH 112 aircraft
. DH 115 aircraft
. DH 125 aircraft
. DHC 2 aircraft
. European Airbus
. . A-300 aircraft
. . A-310 aircraft
. . A-320 aircraft
. . A-330 aircraft
. . A-340 aircraft
. F-2 aircraft
. F-4 aircraft
. F-8 aircraft
. F-9 aircraft
. F-14 aircraft
. F-15 aircraft
. F-16 aircraft
. F-17 aircraft
. F-18 aircraft
. F-20 aircraft
. F-22 aircraft
. F-84 aircraft
. F-86 aircraft
. F-89 aircraft
. F-94 aircraft
. F-100 aircraft
. F-101 aircraft
. F-102 aircraft
. F-104 aircraft
. F-105 aircraft
. F-106 aircraft
. F-117A aircraft
. FD 2 aircraft
. G-91 aircraft
. G-95/4 aircraft
. GA-5 aircraft
. H-17 helicopter
. H-126 aircraft
. HFB-320 aircraft
. HP-115 aircraft
. HS-801 aircraft
. IL-76 aircraft
. IL-86 aircraft
. IL-96 aircraft
. jet provost aircraft
. Jetstream aircraft
. Jindivik target aircraft
. L-29 jet trainer
. L-1011 aircraft
. L-2000 aircraft
. Lear jet aircraft
. MD 11 aircraft
. MD 80 aircraft
. Mirage aircraft
. . Mirage 3 aircraft
. Mystere 50 aircraft
. Nord 1500 aircraft

. P-308 aircraft
. PD-808 aircraft
. S-3 aircraft
. SC-1 aircraft
. Scimitar aircraft
. T-2 aircraft
. T-33 aircraft
. T-37 aircraft
. T-38 aircraft
. T-39 aircraft
. TS-11 aircraft
. TSR-2 aircraft
. TU-104 aircraft
. TU-124 aircraft
. TU-154 aircraft
. TU-204 aircraft
. turbofan aircraft
. . A-7 aircraft
. . BAC 111 aircraft
. . Boeing 707 aircraft
. . Boeing 720 aircraft
. . Boeing 727 aircraft
. . Boeing 733 aircraft
. . Boeing 737 aircraft
. . Boeing 757 aircraft
. . Boeing 767 aircraft
. . C-141 aircraft
. . CL-600 challenger aircraft
. . Concorde aircraft
. . CV-990 aircraft
. . DC 8 aircraft
. . DH 121 aircraft
. . DO-31 aircraft
. . F-5 aircraft
. . F-28 transport aircraft
. . F-111 aircraft
. . IL-62 aircraft
. . Mystere 20 aircraft
. . P-1127 aircraft
. . P-1154 aircraft
. . Saab 37 aircraft
. . Saab 105 aircraft
. . SE-210 aircraft
. . TU-134 aircraft
. . TU-144 aircraft
. turboprop aircraft
. . AN-22 aircraft
. . AN-24 aircraft
. . Argosy MK-1 aircraft
. . ATR-72 aircraft
. . Breguet 941 aircraft
. . Breguet 1150 aircraft
. . C-2 aircraft
. . C-130 aircraft
. . C-133 aircraft
. . C-160 aircraft
. . CL-44 aircraft
. . CL-84 aircraft
. . DHC 5 aircraft
. . DO-328 aircraft
. . E-2 aircraft
. . Electra aircraft
. . F-27 aircraft
. . G-222 aircraft
. . HS-748 aircraft
. . MH-262 aircraft
. . OV-1 aircraft
. . OV-10 aircraft
. . P-3 aircraft
. . SC-5 aircraft
. . Viscount aircraft
. . YS-11 aircraft
. U-2 aircraft
. Valiant aircraft
. Vampire MK 35 aircraft
. VC-10 aircraft
. Victor MK-1 aircraft
. VJ-101 aircraft
. Vulcan aircraft
. X-3 aircraft
. X-5 aircraft
. X-13 aircraft
. X-14 aircraft
. X-21 aircraft
. X-21A aircraft
. X-31 aircraft
. XC-142 aircraft
. XV-4 aircraft
. XV-5 aircraft
. XV-9A aircraft
. Yak 40 aircraft
RT ∞ aircraft
aircraft noise
attack aircraft
bomber aircraft
cargo aircraft
commercial aircraft
fighter aircraft
flying platforms
general aviation aircraft
hypersonic aircraft
∞ jets
∞ low wing aircraft
∞ military aircraft
passenger aircraft
reconnaissance aircraft
research aircraft
short takeoff aircraft
∞ subsonic aircraft
supersonic aircraft
tailless aircraft
tandem wing aircraft
training aircraft
transport aircraft
turbojet engines
V/STOL aircraft
∞ winged vehicles
YF-12 aircraft

jet aircraft noise
UF *jet noise*
GS elastic waves
. sound waves
. . noise (sound)
. . . aircraft noise
. . . . **jet aircraft noise**
RT acoustic retrofitting
aerodynamic noise
∞ aircraft
aircraft runup
engine noise
mufflers
noise measurement
noise reduction
quiet engine program
sonic booms

jet airstreams
USE **jet streams (meteorology)**

jet amplifiers
UF *fluid jet amplifiers*
GS amplifiers
. fluid amplifiers
. . **jet amplifiers**
RT Coanda effect
fluid jets
∞ jet nozzles
nozzle walls

jet assisted takeoff
USE **JATO engines**

jet augmented wing flaps
USE **jet flaps**
wing flaps

jet blast effects
RT ∞ blasts
∞ effects
exhaust gases
ground effect (aerodynamics)
noise (sound)
pressure effects
temperature effects

jet boundaries
GS boundaries
. fluid boundaries
. . **jet boundaries**
interfaces
. fluid boundaries
. . **jet boundaries**
RT free jets
liquid surfaces
wall jets

jet condensers
GS condensers (liquefiers)
. **jet condensers**
RT ∞ condensers
liquefaction
nucleation
spray condensers
working fluids

jet control
RT automatic control
boundary layer control
∞ control
directional control
satellite attitude control
satellite control
thrust control
variable thrust

jet damping
USE **damping**
spin reduction

Jet Dragon aircraft
USE **DH 125 aircraft**

jet drive
USE **jet propulsion**

jet engine fuels
UF *jet fuels*
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . **jet engine fuels**
. . . . JP-4 jet fuel
. . . . JP-5 jet fuel
. . . . JP-6 jet fuel
. . . . JP-7 jet fuel
. . . . JP-8 jet fuel
. . liquid fuels
. . . **jet engine fuels**
. . . . JP-4 jet fuel
. . . . JP-5 jet fuel
. . . . JP-6 jet fuel
. . . . JP-7 jet fuel
. . . . JP-8 jet fuel
RT aircraft fuels
antimisting fuels
gasoline
kerosene
turbines

jet engines
SN (EXCLUDES HYDROJET ENGINES)
DEF Broadly, engines that eject jets or streams of gas or fluids, obtaining all or most of their thrust by reaction to the ejection. Specifically, aircraft engines that derive all or most of their thrust by reaction to their ejection of combustion products (or heated air) in a jet and that obtains oxygen from the atmosphere for the combustion of their fuel (or outside air for heating, as in the case of the nuclear jet engine), distinguished in this sense from a rocket engine. Jet engines of this kind may have compressors, commonly turbine driven, to take in and compress air (turbojets), or they may be compressorless, taking in and compressing air by other means (pulsejets, ramjets).
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . integral rocket ramjets
. . . . . low volume ramjet engines
. . . . . pulsejet engines
. . . . . supersonic combustion ramjet engines
. . . . . turborамjet engines
. . . . turbojet engines
. . . . . Bristol–Siddeley Olympus 593 engine
. . . . . Bristol–Siddeley Viper engine
. . . . . ducted fan engines
. . . . . J–33 engine
. . . . . J–34 engine
. . . . . J–47 engine
. . . . . J–52 engine
. . . . . J–57 engine
. . . . . J–58 engine
. . . . . J–85 engine
. . . . . J–69–T–25 engine
. . . . . J–71 engine
. . . . . J–73 engine
. . . . . J–75 engine
. . . . . J–79 engine
. . . . . J–85 engine
. . . . . J–93 engine
. . . . . RA–28 engine
. . . . . turbofan engines
. . . . . Bristol–Siddeley BS 53 engine
. . . . . CF–700 engine
. . . . . convertible fan–shaft engines
. . . . . J–97 engine
. . . . . TF–30 engine
. . . . . TF–34 engine
. . . . . TF–41 engine
. . . . . turboprop engines
. . . . . T–34 engine
. . . . . T–38 engine
. . . . . T–53 engine
. . . . . T–55 engine
. . . . . T–56 engine
. . . . . T–63 engine
. . . . . T–64 engine
. . . . . T–74 engine
. . . . . T–76 engine
. . . . . T–78 engine
. . . . . turborамjet engines
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . integral rocket ramjets
. . . . . low volume ramjet engines
. . . . . pulsejet engines
. . . . . supersonic combustion ramjet engines
. . . . . turborамjet engines
. . . . turbojet engines
. . . . . Bristol–Siddeley Olympus 593 engine
. . . . . Bristol–Siddeley Viper engine
. . . . . ducted fan engines
. . . . . J–33 engine
. . . . . J–34 engine
. . . . . J–47 engine
. . . . . J–52 engine
. . . . . J–57 engine
. . . . . J–58 engine
. . . . . J–85 engine
. . . . . J–69–T–25 engine
. . . . . J–71 engine
. . . . . J–73 engine
. . . . . J–75 engine
. . . . . J–79 engine
. . . . . J–85 engine
. . . . . J–93 engine
. . . . . RA–28 engine
. . . . . turbofan engines
. . . . . Bristol–Siddeley BS 53 engine
. . . . . CF–700 engine
. . . . . convertible fan–shaft engines
. . . . . J–97 engine
. . . . . TF–30 engine
. . . . . TF–34 engine
. . . . . TF–41 engine
. . . . . turboprop engines
. . . . . T–34 engine
. . . . . T–38 engine
. . . . . T–53 engine
. . . . . T–55 engine
. . . . . T–56 engine
. . . . . T–63 engine
. . . . . T–64 engine
. . . . . T–74 engine
. . . . . T–76 engine
. . . . . T–78 engine
. . . . . turborамjet engines
RT afterburning
aircraft engines
combustion chambers
ejectors
engine starters
exhaust nozzles
flameout
flying ejection seats
fuel injection
fuel pumps
helicopter engines
hybrid propellant rocket engines
hybrid propulsion
infrared suppression
∞ jet nozzles
quiet engine program
reaction products
rocket engines
thrust

jet exhaust
UF *hot jet exhaust*
RT base heating
exhaust emission
exhaust gases
infrared suppression
rocket exhaust

jet flames
USE **flames**
jet flow

jet flaps
UF *jet augmented wing flaps*
GS airfoils
. flaps (control surfaces)
. . jet flaps
control surfaces
. flaps (control surfaces)
. . jet flaps
RT externally blown flaps
H–126 aircraft
short takeoff aircraft
split flaps
tangential blowing
trailing edge flaps
vortex flaps
wing flaps

jet flight
USE **jet aircraft**

jet flow
UF *hot jets*
jet flames
laminar jets
reaction jets
GS fluid flow
. jet flow
. . air jets
. . jet mixing flow

. . peripheral jet flow
. . supersonic jet flow
RT fluid jets
free boundaries
free jets
gas streams
hydraulic jets
injectors
jet membrane process
∞ jets
nozzle flow
particle laden jets
spanwise blowing
two dimensional jets
vapor jets
wall jets

jet fuels
USE **jet engine fuels**

jet impingement
GS impingement
. **jet impingement**
RT ablation
base heating

jet lag
DEF Desynchronization of biological rhythms because of transmeridian flight.
GS biological effects
. **jet lag**
disorientation
. **jet lag**
psychological effects
. **jet lag**
RT desynchronization (biology)
disorders
flight stress (biology)
rhythm (biology)
supersonic flight

jet lift
GS aerodynamic characteristics
. lift
. . **jet lift**
aerodynamic forces
. lift
. . **jet lift**
dynamic characteristics
. lift
. . **jet lift**
RT distribution (property)

jet membrane process
DEF Method for separating or enriching isotopes of the same element by using a condensable vapor as the carrier fluid. A process gas containing the isotopes enters a chamber into which a heavy condensable gas (the jet) flows. The lighter of the two isotopes is enriched, relative to the heavier species, and is collected by a probe downstream for further enrichment or analysis.
GS enrichment
. isotopic enrichment
. . **jet membrane process**
RT gas dynamics
isotope separation
isotopes
jet flow
membranes
∞ processes
uranium

jet mixing flow
GS fluid flow
. jet flow
. . **jet mixing flow**
RT fluid jets
free boundaries
fuel injection
injectors
∞ jets
mixing
mixing layers (fluids)
premixing
two dimensional jets

jet noise
USE **jet aircraft noise**

∞ **jet nozzles**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT carburetors
conical nozzles
exhaust diffusers
exhaust nozzles
fuel injection
injectors
jet amplifiers
jet engines
skirts

jet pilots
USE **aircraft pilots**

jet propulsion
UF *jet drive*
GS propulsion
. **jet propulsion**
RT aircraft engines
chemical propulsion
helicopter propeller drive
marine propulsion
rocket engines
SQUID project
turbines

jet provost aircraft
UF *Hunting P–84 aircraft*
P–84 aircraft
GS attack aircraft
. fighter aircraft
. . **jet provost aircraft**
BAC aircraft
. **jet provost aircraft**
jet aircraft
. **jet provost aircraft**
monoplanes
. **jet provost aircraft**
single engine aircraft
. **jet provost aircraft**
training aircraft
. **jet provost aircraft**
RT ∞ aircraft

jet pumps
SN (EXCLUDES DEVICES USING A LIQUID OR GAS TO INDUCE MOVEMENT OF A GAS SUCH AS AIR EJECTORS)
GS pumps
. **jet pumps**
RT ejectors
fuel pumps
∞ jets
∞ pumping
turbine pumps
vacuum pumps

Jet Star aircraft
USE **C–140 aircraft**

jet streams (meteorology)
DEF Strong bands of wind or winds in the upper troposphere or in the stratosphere, moving in a general direction from west to east and often reaching velocities of hundreds of miles an hour. Used for jet airstreams.
UF *jet airstreams*
GS fluid flow
. gas flow
. . air flow
. . . air currents
. . . . **jet streams (meteorology)**
mesoscale phenomena
. **jet streams (meteorology)**
wind (meteorology)
. winds aloft
. . **jet streams (meteorology)**
RT air jets
atmospheric circulation
circumpolar westerlies
clear air turbulence
Coanda effect
fluid jets
free boundaries
turbulent jets
zonal flow (meteorology)

jet thrust
DEF The thrust of a fluid, especially as distinguished from the thrust of a propeller. Used for reaction jets.
UF *reaction jets*
GS thrust
. **jet thrust**
RT cold gas
convertible fan–shaft engines
high thrust
low thrust
microthrust
rocket thrust
static thrust
thrust loads
variable thrust

jet vanes
DEF Vanes either fixed or movable, used in a jetstream, especially in the jetstream of a rocket, for purposes of stability or control under conditions where external aerodynamic controls are ineffective. Also called blast vane.
GS control surfaces
. guide vanes
. . **jet vanes**
vanes
. guide vanes
. . **jet vanes**
RT airfoils
thrust vector control
wall jets

jetavators
USE **guide vanes**

∞ **jets**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT air jets
fluid jets
free jets
gas jets
injectors
jet aircraft
jet flow
jet mixing flow
jet pumps
plasma jets
sprayers
turbulent jets
two dimensional jets
wall jets

Jetstream aircraft
GS commercial aircraft
. Jetstream aircraft
Grumman aircraft
. Jetstream aircraft
jet aircraft
. Jetstream aircraft
passenger aircraft
. Jetstream aircraft
RT ∞ aircraft

jettas
USE **breakwaters**

jettison systems
RT bailout
ejection
ejection seats
escape (abandonment)
escape systems
jettisoning
∞ systems
wing tanks

jettisoning
RT bailout
disposal
dumping
ejection
emptying
escape (abandonment)
expulsion
jettison systems
spilling

JF 101 aircraft
USE **F-101 aircraft**

JFET
DEF Junction field effect transistors in which semiconductor channels of low conductivity join the source and drain and in which these channels are reduced and cut off by the junction depletion regions, which reduce the conductivity and cause a voltage to be applied between the gate electrodes. Used for junction field effect transistors.
UF *junction field effect transistors*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . transistors
. . . . field effect transistors
. . . . . JFET
. . . . junction transistors
. . . . . JFET
RT barrier layers
∞ junctions

jigs
GS positioning devices (machinery)
. jigs
RT clamps
fixtures
holders
mechanical devices
tools

Jikken satellite
USE **EXOS-B satellite**

jimsphere balloons
GS expendable structures
. inflatable structures
. balloons
. . high altitude balloons
. . . jimsphere balloons
. . meteorological balloons
. . . jimsphere balloons
RT wind (meteorology)

Jindivik target aircraft
GS drone vehicles
. drone aircraft
. . target drone aircraft
. . . Jindivik target aircraft
jet aircraft
. Jindivik target aircraft
monoplanes
. Jindivik target aircraft
pilotless aircraft
. drone aircraft
. . target drone aircraft
. . . Jindivik target aircraft
targets
. Jindivik target aircraft
RT ∞ aircraft
remotely piloted vehicles

jitter
USE **vibration**

jobs
USE **tasks**

Jodrell Bank Observatory
DEF A large radio telescope, located near Manchester, England.
GS observatories
. Jodrell Bank Observatory
RT astronomical observatories
ground stations
radio telescopes
tracking stations

Johnston Island
GS landforms
. islands
. . Pacific islands
. . . Johnston Island

joined wings
GS airfoils
. wings
. . joined wings
RT aircraft configurations
dual wing configurations
research aircraft
tandem wing aircraft
wing tips

∞ **joining**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *interconnection*
linking
RT adhesion
adhesive bonding
assembling
beam leads
binding
bonding
brazing
cold working
couplings
crosslinking
fitting
fusion (melting)
inertia bonding
joints (junctions)
locking
mooring
mounting
positioning
retaining
riveting
sealing
sewing
soldering
splicing
ultrasonic soldering
welding
yokes

Joint European Torus
GS nuclear reactors
. tokamak devices
. . Joint European Torus
plasma generators
. tokamak devices
. . Joint European Torus
RT controlled fusion
reactor technology

joints (anatomy)
GS anatomy
. musculoskeletal system
. . joints (anatomy)
. . . elbow (anatomy)
. . . knee (anatomy)
. . . wrist
RT arthritis
bones
connective tissue
flexors
ligaments
shoulders

joints (junctions)
UF connections
shanks
GS joints (junctions)
. bolted joints
. bonded joints
. butt joints
. interference fit
. lap joints
. metal joints
. . soldered joints
. . welded joints
. . . spot welds
. riveted joints
. seams (joints)
RT adapters
adhesives
bells
barrier layers
bellows
bonding
closures
connectors
corners
couplings
fasteners
fillets
fittings
∞ joining
∞ junctions
linkages
metal bonding
sleeves
structural members
swivels
unions (connectors)

Jordan
GS nations
. Jordan

Jordan form
GS algebra
. vector spaces
. . matrices (mathematics)

. . . **Jordan form**
RT **eigenvalues**
linear transformations
tensors

Josephson junctions
RT *high temperature superconductors*
SIS (superconductors)
squid (detectors)
superconductivity
tunnel junctions

Joukowski transformation
RT **airfoil profiles**
complex variables
coordinate transformations
Kutta–Joukowski condition
Theodorsen transformation

Joule heating
USE **ohmic dissipation**
resistance heating

Joule–Thomson effect
DEF A change of temperature in a gas undergoing Joule–Thomson expansion.
RT **cryogenics**
∞ **effects**
enthalpy
gas expansion
gas flow
kinetic theory
ohmic dissipation
thermodynamic properties
thermodynamics
throttling

journal bearings
DEF **Bearings that support the cylindrical journal of a shaft in rotating machinery.**
GS **bearings**
. **journal bearings**
RT **antifriction bearings**
foil bearings

∞ **journals**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT **news media**
periodicals
shafts (machine elements)

journals (documents)
USE **periodicals**

journals (shafts)
USE **shafts (machine elements)**

JP–4 jet fuel
GS **fuels**
. **chemical fuels**
. . **hydrocarbon fuels**
. . . **jet engine fuels**
. . . . **JP–4 jet fuel**
. . **liquid fuels**
. . . **jet engine fuels**
. . . . **JP–4 jet fuel**
RT *JP–6 jet fuel*
JP–8 jet fuel
RP–1 rocket propellants

JP–5 jet fuel
GS **fuels**
. **chemical fuels**
. . **hydrocarbon fuels**
. . . **jet engine fuels**
. . . . **JP–5 jet fuel**
. . **liquid fuels**
. . . **jet engine fuels**
. . . . **JP–5 jet fuel**

JP–6 jet fuel
GS **fuels**
. **chemical fuels**
. . **hydrocarbon fuels**
. . . **jet engine fuels**
. . . . **JP–6 jet fuel**
. . **liquid fuels**
. . . **jet engine fuels**
. . . . **JP–6 jet fuel**
RT *JP–4 jet fuel*
JP–8 jet fuel

JP–7 jet fuel
(added September 1995)
GS **fuels**
. **chemical fuels**
. . **hydrocarbon fuels**
. . . **jet engine fuels**
. . . . **JP–7 jet fuel**
. . **liquid fuels**
. . . **jet engine fuels**
. . . . **JP–7 jet fuel**
RT *JP–8 jet fuel*
kerosene

JP–8 jet fuel
GS **fuels**
. **chemical fuels**
. . **hydrocarbon fuels**
. . . **jet engine fuels**
. . . . **JP–8 jet fuel**
. . **liquid fuels**
. . . **jet engine fuels**
. . . . **JP–8 jet fuel**
RT *JP–4 jet fuel*
JP–6 jet fuel
JP–7 jet fuel
kerosene

judgments
RT **decision making**
decisions
legal liability
penalties

Judi–Dart rocket
GS **measuring instruments**
. **sondes**
. . **Judi–Dart rocket**
rocket vehicles
. **sounding rockets**
. . **Judi–Dart rocket**
RT **rocket sounding**

juices
GS **liquids**
. **juices**
RT **creatine**

jumpers
DEF Short lengths of conductors used to complete electrical circuits, usually temporary, between terminals, or bypassing an existing circuit.
GS **conductors**
. **electrolytes**
. . **jumpers**
RT **connectors**
short circuits
∞ **terminals**
wire

junction diodes
GS **electronic equipment**
. **diodes**
. . **semiconductor diodes**
. . . **junction diodes**
. . . . **MIM diodes**
. . . . **step recovery diodes**
. **solid state devices**
. . **semiconductor devices**
. . . **junction diodes**
. . . . **MIM diodes**
. . . . **step recovery diodes**
RT **barrier layers**
Barritt diodes
germanium diodes
heterojunction devices
heterojunctions
tunnel diodes
varactor diodes

junction field effect transistors
USE **JFET**

junction transistors
GS **electronic equipment**
. **solid state devices**
. . **semiconductor devices**
. . . **transistors**
. . . . **junction transistors**
. . . . . **JFET**
RT **barrier layers**
epitaxy
ion implantation
∞ **junctions**
MBM junctions
phototransistors
thyristors

∞ **junctions**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF In semiconductor devices, regions of transition between semiconducting regions of different electrical properties.
RT **connectors**
intersections
JFET
joints (junctions)
junction transistors
p–i–n junctions
p–n junctions
p–n–p junctions
p–n–p–n junctions
semiconductor devices
semiconductor junctions

jungles
USE **tropical regions**

Juno 1 launch vehicle
GS **launch vehicles**
. **Juno launch vehicles**
. . **Juno 1 launch vehicle**
rocket vehicles
. **multistage rocket vehicles**
. . **Juno launch vehicles**
. . . **Juno 1 launch vehicle**
RT **Explorer satellites**
Jupiter C rocket vehicle
liquid propellant rocket engines
sergeant missiles
solid propellant rocket engines

Juno 2 launch vehicle
GS **launch vehicles**
. **Juno launch vehicles**
. . **Juno 2 launch vehicle**
rocket vehicles
. **multistage rocket vehicles**
. . **Juno launch vehicles**
. . . **Juno 2 launch vehicle**
RT **Explorer 11 satellite**
Jupiter missile

liquid propellant rocket engines
Pioneer 3 space probe
Pioneer 4 space probe
Pioneer 6 space probe
Pioneer 7 space probe
Pioneer 8 space probe
Pioneer space probes
sergeant missiles
solid propellant rocket engines

Juno launch vehicles
GS launch vehicles
. **Juno launch vehicles**
. . Juno 1 launch vehicle
. . Juno 2 launch vehicle
rocket vehicles
. multistage rocket vehicles
. . **Juno launch vehicles**
. . . Juno 1 launch vehicle
. . . Juno 2 launch vehicle
RT liquid propellant rocket engines
solid propellant rocket engines
∞ vehicles

Jupiter (planet)
GS celestial bodies
. planets
. . gas giant planets
. . . **Jupiter (planet)**
RT Adrastea
Amalthea
Amor asteroid
Apollo asteroids
Callisto
Carme
Elara
Europa
Galilean satellites
Galileo probe
Galileo spacecraft
Ganymede
Himalia
Io
Jupiter atmosphere
Jupiter probes
Jupiter red spot
Jupiter rings
Jupiter satellites
Leda
Lysithea
Metis
Pasiphae
Shoemaker-Levy 9 comet
Sinope
Thebe
Voyager 1 spacecraft
Voyager 2 spacecraft
Voyager 1977 mission

Jupiter atmosphere
GS environments
. extraterrestrial environments
. . planetary environments
. . . planetary atmospheres
. . . . **Jupiter atmosphere**
RT aerospace environments
Galileo project
geophysical fluid flow cells
Jupiter (planet)
Jupiter rings
planetary ionospheres
planetary meteorology

Jupiter C rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . **Jupiter C rocket vehicle**
RT Explorer satellites
Juno 1 launch vehicle
Jupiter missile
launch vehicles
liquid propellant rocket engines
sergeant missiles
solid propellant rocket engines

Jupiter missile
GS missiles
. ballistic missiles
. . intermediate range ballistic missiles
. . . **Jupiter missile**
. surface to surface missiles
. . intermediate range ballistic missiles
. . . **Jupiter missile**
RT Juno 2 launch vehicle
Jupiter C rocket vehicle
liquid propellant rocket engines

Jupiter probes
GS interplanetary spacecraft
. **Jupiter probes**
. . Galileo probe
. . Galileo spacecraft
unmanned spacecraft
. space probes
. . **Jupiter probes**
. . . Galileo probe
. . . Galileo spacecraft
RT Galileo project
Jupiter (planet)
Voyager 1 spacecraft
Voyager 2 spacecraft
Voyager 1977 mission

Jupiter project
GS programs
. NASA programs
. . NASA space programs
. . . **Jupiter project**
. projects
. . **Jupiter project**
. space programs
. . NASA space programs
. . . **Jupiter project**
RT launch vehicles

Jupiter red spot
RT gas giant planets
Jupiter (planet)
planetary surfaces
planets
surface properties
topography

Jupiter rings
DEF Ring structures around the planet Jupiter discovered on March 4, 1979 by Voyager 1.
GS celestial bodies
. planetary rings
. . **Jupiter rings**
RT Jupiter (planet)
Jupiter atmosphere
Jupiter satellites
moonlets
planetary composition
planetary structure
planetology
∞ rings
Saturn rings
space exploration
Uranus rings
Voyager 1 spacecraft

Jupiter satellites
DEF Any or all of the natural satellites surrounding the planet Jupiter.
GS celestial bodies
. natural satellites
. . **Jupiter satellites**
. . . Adrastea
. . . Amalthea
. . . Carme
. . . Elara
. . . Galilean satellites
. . . . Callisto
. . . . Europa
. . . . Ganymede
. . . . Io
. . . Himalia
. . . Leda
. . . Lysithea
. . . Metis
. . . Pasiphae
. . . Sinope
. . . Thebe
RT icy satellites
Jupiter (planet)
Jupiter rings
solar system

K

K band
USE **extremely high frequencies**

K lines
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . line spectra
. . . . **K lines**
RT absorption spectra
emission spectra
H lines

K stars
GS celestial bodies
. stars
. . late stars
. . . cool stars
. . . . **K stars**
RT dwarf stars
giant stars
main sequence stars
stellar spectra
supergiant stars

k-epsilon turbulence model
(added September 1988)
UF *kappa-epsilon turbulence model*
GS models
. mathematical models
. . turbulence models
. . . **k-epsilon turbulence model**
RT closure law
computational fluid dynamics
flow equations
k-omega turbulence model
turbulent boundary layer
turbulent flow

k-mesons
USE **kaons**

k-omega turbulence model
(added June 1997)
UF *kappa-omega turbulence model*
GS models
. mathematical models
. . turbulence models
. . . **k-omega turbulence model**
RT computational fluid dynamics
k-epsilon turbulence model
turbulent boundary layer
turbulent flow

K-T boundary
USE **Cretaceous-Tertiary boundary**

KA band
USE **extremely high frequencies**

Kakutani theorem
GS theorems
. **Kakutani theorem**
RT lattices (mathematics)
stochastic processes
vector spaces

Kalahari Basin (Africa)
GS landforms
. structural basins
. . **Kalahari Basin (Africa)**
RT Africa
deserts
Republic of South Africa

Kalman filters
GS linear filters
. **Kalman filters**
RT electric filters
∞ filters
linear quadratic Gaussian control
linear quadratic regulator
navigation aids
optimization
reduced order filters
state estimation

Kalman-Schmidt filtering
RT∞ applications of mathematics
feedback control
inertial platforms
navigation instruments
optimal control
optimization
remote control
stochastic processes
time series analysis

kamacite
GS alloys
. nickel alloys
. . **kamacite**
minerals
. **kamacite**
RT iron alloys
iron meteorites
meteoritic composition

Kaman aircraft
GS **Kaman aircraft**
. H-43 helicopter
. HH-43 helicopter
. UH-2 helicopter
RT∞ aircraft

Kaman UH-2A helicopter
USE **UH-2 helicopter**

Kampuchea
USE **Cambodia**

Kansas
GS nations
. United States
. . **Kansas**
RT Missouri River (US)

kaolinite
DEF A hydrous silicate of aluminum. It constitutes the principle mineral in kaolin.
GS aluminum compounds
. aluminum silicates
. . **kaolinite**
clays
. **kaolinite**
minerals
. **kaolinite**
silicon compounds
. silicates
. . aluminum silicates
. . . **kaolinite**
RT aluminum oxides
ion exchanging
soils

kaon production
GS particle production
. **kaon production**
RT kaons
particle accelerators

kaons
UF k-mesons
GS particles
. elementary particles
. . bosons
. . . mesons
. . . . **kaons**
. hadrons
. . mesons
. . . . **kaons**
. nuclear particles
. . bosons
. . . mesons
. . . . **kaons**
RT baryons
charged particles
kaon production
pions
Pomeranchuk theorem

Kapitza resistance
RT∞ resistance

Kapoeta achondrite
GS celestial bodies
. meteorites
. . stony meteorites
. . . achondrites
. . . . **Kapoeta achondrite**

Kappa 8 rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . Kappa rocket vehicles
. . . **Kappa 8 rocket vehicle**
. sounding rockets
. . Kappa rocket vehicles
. . . **Kappa 8 rocket vehicle**
RT solid propellant rocket engines

Kappa 9 rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . Kappa rocket vehicles
. . . **Kappa 9 rocket vehicle**
. sounding rockets
. . Kappa rocket vehicles
. . . **Kappa 9 rocket vehicle**
RT solid propellant rocket engines

Kappa rocket vehicles
GS rocket vehicles
. multistage rocket vehicles
. . **Kappa rocket vehicles**
. . . Kappa 8 rocket vehicle
. . . Kappa 9 rocket vehicle
. sounding rockets
. . **Kappa rocket vehicles**
. . . Kappa 8 rocket vehicle
. . . Kappa 9 rocket vehicle
RT solid propellant rocket engines
∞ vehicles

kappa-epsilon turbulence model
USE **k-epsilon turbulence model**

kappa-omega turbulence model
USE **k-omega turbulence model**

Kapton (trademark)
GS nitrogen compounds
. amides
. . polyimides
. . . **Kapton (trademark)**
polymeric films

. **Kapton (trademark)**
RT ∞ **films**
plastics
∞ polymers

Karhunen–Loeve expansion
GS data processing
. **Karhunen–Loeve expansion**
expansion
. **Karhunen–Loeve expansion**
RT principal components analysis

Karl Fischer reagent
GS chemical tests
. chemical analysis
. . **Karl Fischer reagent**
RT dioxides
methyl alcohol
pyridines
quantitative analysis

Karman vortex street
DEF A double trail of vortices formed alternately on both sides of a cylinder of similar body moving at right angles to its axis through a fluid, the vortices in one row rotating in a direction opposite to that of the other row. (After Theodore von Karman, 1881–1963, Hungarian born American scientist).
GS vortex streets
. **Karman vortex street**
RT aeolian tones
subsonic flow
Von Karman equation
vorticity equations

Karman–Bodewadt flow
GS fluid flow
. axisymmetric flow
. . **Karman–Bodewadt flow**
. parallel flow
. . three dimensional flow
. . . **Karman–Bodewadt flow**
. viscous flow
. . **Karman–Bodewadt flow**
transitional motion
. three dimensional motion
. . three dimensional flow
. . . **Karman–Bodewadt flow**
RT rotating disks
rotating fluids

karst
GS landforms
. structural basins
. . **karst**
. . . sinkholes
RT caves
cavities
kettles (geology)
∞ ridges
rocks

Kawasaki aircraft
RT ∞ aircraft

Kazakhstan
(added August 1993)
GS nations
. **Kazakhstan**
RT Asia

KC–130 aircraft
USE **C–130 aircraft**

KC–135 aircraft
USE **C–135 aircraft**

keels
GS hydrofoils
. **keels**
RT boats
hulls (structures)
longerons
ships
stabilizers (fluid dynamics)

KEL–F
GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . fluorine organic compounds
. . . . fluoropolymers
. . . . . **KEL–F**
organic compounds
. fluorine organic compounds
. . fluoropolymers
. . . **KEL–F**
RT copolymers
∞ polymers

kelp
USE **seaweeds**

Kelvin waves
(added July 1994)
RT atmospheric circulation
Coriolis effect
gravity waves
ocean currents
planetary waves
∞ **waves**

Kelvin–Helmholtz instability
RT collisionless plasmas
flow stability
∞ Helmholtz equations
magnetohydrodynamic flow
magnetohydrodynamic stability
mass flow
nonuniform plasmas
plasmas (physics)
superfluidity

Kentucky
GS nations
. United States
. . **Kentucky**
RT Ohio River (US)
Tennessee Valley (AL–KY–TN)

Kenya
GS nations
. **Kenya**
RT Africa

Kepler laws
DEF The three empirical laws governing the motions of the planets in their orbits, discovered by Johannes Kepler (1571–1630). These are: (a) the orbits of the planets are ellipses, with the sun at a common focus; (b) as a planet moves in its orbit, the line joining the planet and the sun sweeps over equal areas in equal intervals of time (also called law of equal areas); (c) the squares of the periods of revolution of any two planets are proportional to the cubes of their mean distances from the sun.
GS classical mechanics
. space mechanics
. . orbital mechanics
. . . **Kepler laws**
laws
. **Kepler laws**

keratins
GS biopolymers
. proteins
. . **keratins**
organic compounds
. proteins
. . **keratins**
RT hair
wool

keratitis
GS diseases
. eye diseases
. . **keratitis**
. infectious diseases
. . bacterial diseases
. . . **keratitis**
RT conjunctiva
cornea

kernel functions
GS analysis (mathematics)
. real variables
. . **kernel functions**
functions (mathematics)
. **kernel functions**
RT Mellin transforms

kerogen
DEF Fossilized insoluble organic material found in sedimentary rocks, usually shales, which can be converted to petroleum products by distillation.
GS organic compounds
. **kerogen**
resources
. Earth resources
. . **kerogen**
RT fuel oils
fuels
gasoline
greases
hydrocarbon fuels
kerosene
lubricants
oils
petroleum products
shale oil

kerosene
GS fuels
. chemical fuels
. . liquid fuels
. . . **kerosene**
RT antimisting fuels
diesel fuels
fuel oils
gasoline
hydrocarbon fuels
jet engine fuels
JP–7 jet fuel
JP–8 jet fuel
kerogen
paraffins
RP–1 rocket propellants
shale oil

Kerr cells
RT camera shutters
∞ cells
∞ electric cells
polarized electromagnetic radiation
polarizers

∞ **Kerr effects**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ effects
electro–optical effect
Kerr electrooptical effect

Kerr magnetooptical effect
magnetic fields

Kerr electrooptical effect
GS electromagnetic properties
. optical properties
. . birefringence
. . . **Kerr electrooptical effect**
refraction
. birefringence
. . **Kerr electrooptical effect**
RT∞ **effects**
electromagnetic radiation
electro-optics
∞ Kerr effects
Kerr magnetooptical effect
lasers
light modulation
polarization (waves)

Kerr magnetooptical effect
GS electromagnetic properties
. **Kerr magnetooptical effect**
RT∞ **effects**
Faraday effect
∞ Kerr effects
Kerr electrooptical effect
magneto-optics
optical properties
polarization (waves)
polarized light

Kestrel aircraft
USE **P-1127 aircraft**

ketones
RT ketones

ketones
DEF A class of organic compounds possessing a carbonyl group attached to two hydrocarbon groups.
GS **ketones**
. acetone
. acetylacetone
. anthraquinones
. camphor
. Nembutal (trademark)
. pentanone
. trimethadione
RT ketenes
PEEK
quinones

kettles (geology)
DEF Steepsided, usually basin or bowlshaped holes or depressions, commonly without surface drainage, in glacial drift deposits (especially outwash and kame fields). Kettles often contain lakes or swamps; formed by the melting of large detached blocks of stagnant ice (left behind by retreating glaciers) that had been wholly or partly buried by glacial drift. Kettles range in depth from about a meter to as much as 13 km. Thoreau's Walden Pond is an example.
GS geology
. **kettles (geology)**
landforms
. structural basins
. . **kettles (geology)**
RT caves
cavities
Earth resources
glacial drift
karst
lakes
sinkholes

Kevlar (trademark)
DEF A Dupont synthetic textile material, lightweight and nonflammable, and with high impact resistance.
GS fibers
. reinforcing fibers
. . aramid fibers
. . . **Kevlar (trademark)**
. synthetic fibers
. . aramid fibers
. . . **Kevlar (trademark)**
plastics
. synthetic resins
. . thermosetting resins
. . . furan resins
. . . . polyamide resins
. . . . . **Kevlar (trademark)**
resins
. synthetic resins
. . thermosetting resins
. . . furan resins
. . . . polyamide resins
. . . . . **Kevlar (trademark)**
RT aramid fiber composites
nonflammable materials
synthetic fibers

keying
GS **keying**
. frequency shift keying
. phase shift keying
. . binary phase shift keying
. . quadrature phase shift keying
RT Morse code
radio telegraphy
teleprinters
teletypewriters

keys (islands)
UF *cays*
GS landforms
. islands
. . **keys (islands)**
RT coral reefs
Earth resources
island arcs
oceans

kidney diseases
GS diseases
. **kidney diseases**
. . nephritis
RT cholera

kidneys
GS anatomy
. genitourinary system
. . **kidneys**
. . . glomerulus
RT renal function
urine
urolithiasis
urology

kilometer wave orbiting telescope
GS radio equipment
. radio telescopes
. . **kilometer wave orbiting telescope**
telescopes
. radio telescopes
. . **kilometer wave orbiting telescope**

kilometric waves
DEF Electromagnetic waves with wavelengths between 1,000 and 10,000 meters.
GS electromagnetic radiation
. **kilometric waves**
RT∞ waves

kimberlite
USE **biotite**
peridotite

kinematic equations
GS equations of motion
. kinetic equations
. . **kinematic equations**
RT∞ equations

kinematics
DEF The branch of mechanics dealing with the description of the motion of bodies or fluids without reference to the forces producing the motion.
GS **kinematics**
. body kinematics
. inverse kinematics
RT acceleration (physics)
∞ dynamics
equations of motion
hodographs
kinetics
∞ mechanics (physics)
microwave reflectometers
∞ motion
nutation
velocity

kinescopes
USE **picture tubes**

kinesthesia
GS perception
. sensory perception
. . **kinesthesia**
RT proprioception

kinesthesis
USE **proprioception**

kinetic energy
DEF The energy which a body possesses as a consequence of its motion. Used for momentum energy.
UF *momentum energy*
GS kinetics
. **kinetic energy**
RT chemical energy
electron energy
∞ energy
equipartition theorem
Froude number
hydrodynamic ram effect
internal energy
Lagrange similarity hypothesis
Lagrangian function
particle energy
potential energy
proton energy
thermal energy
virial theorem
work
zero point energy

kinetic equations
GS equations of motion
. **kinetic equations**
. . hydrodynamic equations
. . . Burnett equations
. . . Helmholtz vorticity equation
. . kinematic equations
RT BBGKY hierarchy
Bethe-Salpeter equation
BGK model
Einstein equations
∞ equations
partial differential equations

virial theorem

kinetic friction
GS friction
. **kinetic friction**
. . sliding friction
RT coefficient of friction
dry friction
friction measurement
static friction

kinetic heating
GS heating
. **kinetic heating**
. . aerodynamic heating
. . . shock heating
RT gas heating
magnetic pumping
plasma heating

kinetic theory
DEF The derivation of the bulk properties of fluids from the properties of their constituent molecules, their motions and interactions.
GS **kinetic theory**
. transport theory
. . Chapman–Enskog theory
. . Eyring theory
. . mixing length flow theory
RT BGK model
binary fluids
Boltzmann distribution
Boltzmann transport equation
diffusion
diffusion theory
diffusion waves
dynamic pressure
equations of state
free molecular flow
gas transport
gaseous self-diffusion
ideal gas
Joule–Thomson effect
Knudsen flow
Krook equation
Lorentz gas
mass flow
Maxwell–Boltzmann density function
mobility
momentum transfer
Morse potential
real gases
∞ theories
transport properties

kinetics
GS **kinetics**
. electrokinetics
. kinetic energy
. Newton second law
. Newton Theory
. reaction kinetics
. variable mass systems
RT acceleration (physics)
angular momentum
body kinematics
∞ dynamics
fluid dynamics
fluid mechanics
∞ force
gas dynamics
hydromechanics
ideal gas
kinematics
∞ mechanics (physics)
momentum transfer
motion aftereffects
newton
particle collisions
∞ physics
velocity

kinoform
GS display devices
. **kinoform**
imagery
. **kinoform**
RT computer programming
holography
wave front reconstruction

∞ **Kirchhoff law**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Kirchhoff law of networks
Kirchhoff law of radiation

Kirchhoff law of networks
RT circuits
electric current
electric potential
∞ Kirchhoff law
∞ nets
network analysis
network synthesis

Kirchhoff law of radiation
DEF The radiation law which states that at a given temperature the ratio of the emissivity to the absorptivity for a given wavelength is the same for all bodies and is equal to the emissivity of an ideal black body at that temperature and wavelength.
GS **laws**
. radiation laws
. . **Kirchhoff law of radiation**
RT absorptivity
black body radiation
∞ Kirchhoff law
∞ radiation
Stefan–Boltzmann law
thermodynamics

Kirchhoff–Helmholtz flow
USE **pipe flow**

Kirchhoff–Huygens principle
USE **diffraction**
wave propagation

Kirkendall effect
RT diffusion theory
diffusion welding
diffusivity
∞ effects
thermal diffusion

kite balloons
USE **tethered balloons**

kite
RT first aid
survival
tools

KIWI B reactors
GS nuclear electric power generation
. nuclear power reactors
. . KIWI reactors
. . . **KIWI B reactors**
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
nuclear reactors
. gas cooled reactors
. . KIWI reactors
. . . **KIWI B reactors**
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
. nuclear power reactors
. . KIWI reactors
. . . **KIWI B reactors**
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
. nuclear research and test reactors
. . KIWI reactors
. . . **KIWI B reactors**
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor

KIWI B-1 Reactor
GS nuclear electric power generation
. nuclear power reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-1 Reactor**
nuclear reactors
. gas cooled reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-1 Reactor**
. nuclear power reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-1 Reactor**
. nuclear research and test reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-1 Reactor**

KIWI B-4 Reactor
GS nuclear electric power generation
. nuclear power reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-4 Reactor**
nuclear reactors
. gas cooled reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-4 Reactor**
. nuclear power reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-4 Reactor**
. nuclear research and test reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . **KIWI B-4 Reactor**

KIWI reactors
UF *KIWI rocket reactors*
GS nuclear electric power generation
. nuclear power reactors
. . **KIWI reactors**
. . . KIWI B reactors
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
nuclear reactors
. gas cooled reactors
. . **KIWI reactors**
. . . KIWI B reactors
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
. nuclear power reactors
. . **KIWI reactors**
. . . KIWI B reactors
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
. nuclear research and test reactors
. . **KIWI reactors**
. . . KIWI B reactors
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
RT NRX reactors

nuclear engine for rocket vehicles
Phoebus nuclear reactor
Rover project

KIWI rocket reactors
USE **KIWI reactors**

Kjeldahl method
GS chemical tests
. chemical analysis
. . quantitative analysis
. . . **Kjeldahl method**
RT ammonia
∞ methodology
nitrogen
titration

Klebsiella
GS microorganisms
. bacteria
. . **Klebsiella**

Klein–Dunham potential
RT ∞ potential
quantum theory

Klein–Gordon equation
GS wave equations
. **Klein–Gordon equation**
RT Dirac equation
∞ equations

klippen
USE **outliers (landforms)**

klystrons
DEF Electron tubes for converting direct current energy into radio frequency energy by alternately speeding up and slowing down the electrons.
GS electron tubes
. vacuum tubes
. . microwave tubes
. . . **klystrons**
microwave equipment
. microwave tubes
. . **klystrons**
RT amplifiers
catchers
cavity resonators
cyclotron resonance devices
electron bunching
electron cyclotron heating
electrostatic generators
magnetrons
microwave oscillators

knee (anatomy)
GS anatomy
. limbs (anatomy)
. . leg (anatomy)
. . . **knee (anatomy)**
. musculoskeletal system
. . joints (anatomy)
. . . **knee (anatomy)**
appendages
. leg (anatomy)
. . **knee (anatomy)**
RT femur

knight shift
USE **nuclear magnetic resonance**

knobs
RT handles
levers
manual control

Knoop hardness
GS mechanical properties
. hardness
. . **Knoop hardness**
RT hardness tests
microhardness

knowledge
GS **knowledge**
. philosophy
. . paradoxes
RT axioms
documentation
education
learning
literature
perception
textbooks
training evaluation

knowledge based systems
(added April 1993)
GS information systems
. **knowledge based systems**
. . expert systems
RT artificial intelligence
computer techniques
data structures
decision support systems
knowledge bases (artificial intelligence)
knowledge representation
natural language processing
pilot support systems

knowledge bases (artificial intelligence)
(added November 1988)
DEF Facts, assumptions, beliefs, and heuristics, used in dealing with a database to achieve desired results such as a diagnosis, an interpretation, or a solution to a problem.
GS data bases
. **knowledge bases (artificial intelligence)**
RT artificial intelligence
expert systems
knowledge based systems
knowledge representation

knowledge representation
DEF The use of symbolic data structures to represent knowledge so that a computer can manipulate them.
RT artificial intelligence
belief networks
cognition
expert systems
hypertext
knowledge based systems
knowledge bases (artificial intelligence)
natural language (computers)

Knudsen cells
USE **Knudsen gages**

Knudsen flow
UF *Knudsen number*
GS fluid flow
. gas flow
. . **Knudsen flow**
. internal flow
. . ducted flow
. . . **Knudsen flow**
RT BGK model
boundary layer transition
free molecular flow
kinetic theory
mean free path
molecular flow
pressure gradients
rarefied gas dynamics
transition points
vacuum
viscous flow

Knudsen gages
DEF Gages which measure pressure in terms of the net rate of transfer of momentum by molecules between two surfaces maintained at different temperatures and separated by a distance smaller than the mean free path of the gas molecules. Used for Knudsen cells.
UF *Knudsen cells*
GS measuring instruments
. pressure gages
. . vacuum gages
. . . **Knudsen gages**
vacuum apparatus
. vacuum gages
. . **Knudsen gages**
RT ionization gages
McLeod gages
Pirani gages
pressure measurement
radiometers

Knudsen number
USE **Knudsen flow**

knurling
RT grooving
machining
metal cutting

Kohoutek comet
GS celestial bodies
. comets
. . **Kohoutek comet**
RT Bessel–Bredichin theory
∞ coma
radiation pressure
solar system

Kolmogorov theory
(added July 1993)
RT isotropic turbulence
Lagrange similarity hypothesis
shear flow
∞ theories
turbulent flow
vortices

Kolmogorov–Smirnov test
(added July 1993)
GS statistical analysis
. statistical tests
. . **Kolmogorov–Smirnov test**
RT probability theory
statistical distributions

Kondo effect
DEF Change in superconductivity characteristics resulting from magnetic impurities in the compounds involved.
GS electrical properties
. electrical resistivity
. . superconductivity
. . . **Kondo effect**
transport properties
. electrical resistivity
. . superconductivity
. . . **Kondo effect**
RT alloys
∞ effects
low temperature physics
magnetic materials

nuclear spin
transition temperature

∞ **Korea**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT North Korea
South Korea

Korteweg–Devries equation
DEF The mathematical representation describing the propagation of long waves of small but finite amplitude.
GS wave equations
. Korteweg–Devries equation
RT ∞ equations

Kossel pattern
GS distribution (property)
. radiation distribution
. . diffraction patterns
. . . Kossel pattern
RT crystal lattices

Kovar (trademark)
GS alloys
. Kovar (trademark)
RT cobalt alloys

KP index
GS ratios
. indexes (ratios)
. . KP index
RT Earth magnetosphere
geomagnetic pulsations
geomagnetism
∞ indexes
magnetic disturbances
magnetic properties
magnetic variations

Kraft process (woodpulp)
DEF Woodpulping process in which sodium sulfate is used in the caustic soda pulp–digestion liquor. Also known as sulfate pulping or Kraft pulping.
RT manufacturing
paper (material)
∞ processes

Kramers–Kronig formula
DEF The relationship between the attenuation coefficient and the dispersion (frequency dependent phase velocity) for viscoelastic waves.
RT ∞ dispersion
∞ formulas
opacity
spectrum analysis

Krebs cycle
RT cells (biology)
metabolism

kreep
DEF A yellow–brown glassy lunar mineral enriched in potassium, rare earth elements, and phosphate.
GS minerals
. kreep
rocks
. lunar rocks
. . kreep
RT geology
lunar soil
phosphates
potassium
rare earth elements

kriging
DEF A method of providing unbiased estimates of variables in regions where the available data exhibit spatial autocorrelation, and these estimates are obtained in such a way that they have minimum variance.
RT variance (statistics)

Kronecker product
USE **orthogonality**

Krook equation
RT ∞ equations
hydrodynamics
kinetic theory
shear flow
shock wave profiles

Krueger flaps
USE **leading edge flaps**

krypton
GS chemical elements
. rare gases
. . krypton
. . . krypton isotopes
. . . . krypton 85
gases
. rare gases
. . krypton
. . . krypton isotopes
. . . . krypton 85

krypton 85
GS chemical elements
. nuclides
. . isotopes
. . . krypton isotopes
. . . . krypton 85
. . . radioactive isotopes
. . . . krypton 85
. rare gases
. . krypton
. . . krypton isotopes
. . . . krypton 85
gases
. rare gases
. . krypton
. . . krypton isotopes
. . . . krypton 85

krypton fluoride lasers
DEF Rare gas halide ultraviolet stimulated emission devices in which krypton fluoride is the active lasing medium.
GS stimulated emission devices
. lasers
. . gas lasers
. . . rare gas–halide lasers
. . . . krypton fluoride lasers
RT coherent electromagnetic radiation
lasing
masers
optical pumping

krypton isotopes
GS chemical elements
. nuclides
. . isotopes
. . . krypton isotopes
. . . . krypton 85
. rare gases
. . krypton
. . . krypton isotopes
. . . . krypton 85
gases
. rare gases
. . krypton
. . . krypton isotopes
. . . . krypton 85

KS–3 aircraft
USE **S–3 aircraft**

KU band
USE **superhigh frequencies**

Kuiper Airborne Observatory
(added June 1990)
GS observatories
. Kuiper Airborne Observatory
RT airborne equipment
astronomical spectroscopy
C–141 aircraft
infrared astronomy
SOFIA (airborne observatory)

Kuiper belt
(added June 1997)
RT asteroids
comets
Oort cloud
solar system
solar system evolution

Kurile Islands
GS landforms
. islands
. . Pacific islands
. . . Kurile Islands
RT U.S.S.R.

kurtosis
DEF In statistics, the extent to which a frequency distribution is peaked or concentrated about the mean; it is sometimes defined as the ratio of the fourth moment of the distribution to the square of the second moment.
GS distribution (property)
. frequency distribution
. . kurtosis
RT ∞ distribution
Fourier analysis
∞ patterns
statistical distributions

Kutta–Joukowski condition
GS conditions
. Kutta–Joukowski condition
RT airfoil profiles
boundary layer separation
Joukowski transformation

Kuwait
GS nations
. Kuwait
RT Asia

Kvant modules
(added April 1995)
GS artificial satellites
. space stations
. . Mir space station
. . . Kvant modules
manned spacecraft
. Mir space station
. . Kvant modules
Soviet spacecraft
. Mir space station
. . Kvant modules
stations
. space stations
. . Mir space station
. . . Kvant modules
RT International Space Station
Russian Space Program
Soyuz spacecraft

space station structures
x ray telescopes

KWIC indexes
GS classifications
. indexes (documentation)
. . KWIC indexes
RT ∞ indexes
thesauri

Kyokko satellite
USE EXOS–A satellite

Kyrgyzstan
(added August 1993)
GS nations
. Kyrgyzstan
RT Asia

L

L band
USE **ultrahigh frequencies**

L-28 aircraft
USE **U-10 aircraft**

L-29 aircraft
USE **L-29 jet trainer**

L-29 jet trainer
UF *Delfin aircraft*
L-29 aircraft
Omnipol L-29 aircraft
GS **jet aircraft**
. **L-29 jet trainer**
monoplanes
. **L-29 jet trainer**
single engine aircraft
. **L-29 jet trainer**
tilt wing aircraft
. **L-29 jet trainer**
training aircraft
. **L-29 jet trainer**
V/STOL aircraft
. **L-29 jet trainer**

L-1011 aircraft
GS **commercial aircraft**
. **L-1011 aircraft**
jet aircraft
. **L-1011 aircraft**
Lockheed aircraft
. **L-1011 aircraft**
passenger aircraft
. **L-1011 aircraft**
transport aircraft
. **L-1011 aircraft**
RT ∞ **aircraft**
turbofan engines

L-2000 aircraft
UF *Lockheed L-2000 aircraft*
GS **jet aircraft**
. **L-2000 aircraft**
Lockheed aircraft
. **L-2000 aircraft**
passenger aircraft
. **L-2000 aircraft**
supersonic aircraft
. **supersonic transports**
. . **L-2000 aircraft**
transport aircraft
. **L-2000 aircraft**
RT ∞ **aircraft**

L-Sat
DEF A communications satellite designed by European Space Agency member states to meet future communications satellite market needs such as European broadcast services, global telecommunications trunk services, and mobile services. Used for European Large Telecomm Satellite.
UF *European Large Telecomm Satellite*
GS **artificial satellites**
. **communication satellites**
. . **L-Sat**
. **ESA satellites**
. . **L-Sat**
ESA spacecraft
. **ESA satellites**
. . **L-Sat**
RT **satellite networks**

labeling (marking)
USE **marking**

labor
RT **manpower**
mediation
personnel selection

laboratories
GS **laboratories**
. **engine testing laboratories**
. **environmental laboratories**
. **human factors laboratories**
. **lunar laboratories**
. . **lunar receiving laboratory**
. **lunar mobile laboratories**
. **space laboratories**
. . **Advanced Technology Laboratory**
. . **Atmospheric Cloud Physics Lab (Spacelab)**
. . **Earth Viewing Applications Laboratory**
. . **Long Duration Exposure Facility**
. . **manned orbital laboratories**
. . . **Skylab 1**
. . . **Skylab 2**
. . . **Skylab 3**
. . . **Skylab 4**
. . . **Spacelab**
. **underwater research laboratories**
RT **experiment design**
experimentation
nuclear research
research facilities
SAIL project
test facilities
∞ **tests**

laboratory equipment
GS **laboratory equipment**
. **image furnaces**
. **syringes**
RT **ampoules**
∞ **equipment**
glassware
measuring instruments
pipettes

Labrador
RT **Canada**

labyrinth
GS **anatomy**
. **sense organs**
. . **ear**
. . . **labyrinth**
. . . . **cochlea**
. . . . . **Corti organ**
. . . . **otolith organs**
. . . . **semicircular canals**
. . . . **vestibules**

labyrinth seals
DEF Minimum leakage seals that offer resistance to fluid flow while providing radial or axial clearance.
GS **seals (stoppers)**
. **labyrinth seals**
RT **fluid flow**
gaskets
glands (seals)
hermetic seals
leakage
O ring seals
packings (seals)
plugs
pump seals
rotor speed

labyrinthectomy
GS **medical science**
. **surgery**
. . **labyrinthectomy**
RT **ear**

LACATE (experiment)
DEF A NASA balloonborne experiment conducted from a balloon platform carried by a balloon over 400 feet in diameter. The acronym stands for the Lower Atmospheric Composition and Temperature Experiment. The experiment was conducted in 1974. Used for Lower Atmospheric Composition Experiment.
UF *Lower Atmospheric Composition Experiment*
RT **atmospheric composition**
atmospheric temperature
lower atmosphere

LACE (engine)
USE **liquid air cycle engines**

lacquers
GS **coatings**
. **lacquers**
finishes
. **lacquers**
RT **metal coatings**
primers (coatings)
protective coatings
sprayed coatings

lactates
GS **esters**
. **lactates**

lactic acid
GS **acids**
. **carboxylic acids**
. . **lactic acid**
organic compounds
. **carboxylic acids**
. . **lactic acid**

lactose
GS **organic compounds**
. **carbohydrates**
. . **sugars**
. . . **lactose**

lacunae
RT **lichens**
plants (botany)

ladders
RT **escalators**
stairways

lag (delay)
USE **time lag**

LAGEOS (satellite)
UF *Laser Geodynamic Satellite*
GS **artificial satellites**
. **passive satellites**
. . **LAGEOS (satellite)**
RT **laser range finders**
retroreflection

lagoons
DEF Shallow stretches of seawater, such as sounds, channels, bays (topographic features), or

saltwater lakes, near or communicating with seas and partly or completely separated from them by low, narrow, elongated strips of land, such as reefs, barrier islands, sandbanks, or spits. Lagoons are often used to describe sheets of water between offshore coral reefs and the mainland. They often extend roughly parallel to the coast and are little affected by tides. Lagoons are also considered shallow freshwater ponds or lakes near or communicating with larger lakes or rivers.
GS landforms
. **lagoons**
RT atolls
bars (landforms)
beaches
coasts
dunes
inlets (topography)
island arcs
islands
lakes
ponds
reservoirs
topography

Lagrange coordinates
DEF Systems of coordinates by which fluid parcels are identified for all times by assigning them coordinates which do not vary with time. Examples of such coordinates are: (a) the values of any properties of the fluid conserved in the motion; or (b) more generally, the positions in space of the parcels at some arbitrarily selected moment. Subsequent positions in space of the parcels are then the dependent variables, functions of time and of the Lagrange coordinates. Also called material coordinates.
GS coordinates
. **Lagrange coordinates**
RT classical mechanics
hydrodynamics
Lagrangian function
librational motion

Lagrange equations of motion
USE **Euler–Lagrange equation**

Lagrange multipliers
RT chiral dynamics
differential equations
isoperimetric problem
Lagrangian function
multipliers
operations research
optimization

Lagrange similarity hypothesis
GS hypotheses
. **Lagrange similarity hypothesis**
theorems
. similarity theorem
. . **Lagrange similarity hypothesis**
RT energy dissipation
energy transfer
kinetic energy
Kolmogorov theory
turbulent flow

Lagrangian
USE **Lagrangian function**

Lagrangian equilibrium points
GS gravitational effects
. **Lagrangian equilibrium points**
RT celestial mechanics
gravitational fields
orbital mechanics

Lagrangian function
(added April 1993)
UF *Lagrangian*
GS functions (mathematics)
. **Lagrangian function**
RT Euler–Lagrange equation
kinetic energy
Lagrange coordinates
Lagrange multipliers
potential energy

Laguerre functions
GS analysis (mathematics)
. complex variables
. . **Laguerre functions**
functions (mathematics)
. **Laguerre functions**
RT orthogonal functions

lake beds
USE **beds (geology)**

Lake Champlain Basin (NY–VT)
GS landforms
. structural basins
. . **Lake Champlain Basin (NY–VT)**
RT Canada
lakes
New York
Vermont

Lake Erie
GS lakes
. Great Lakes (North America)
. . **Lake Erie**
RT hydrology
rivers
streams
water
water management

Lake Huron
GS lakes
. Great Lakes (North America)
. . **Lake Huron**
RT hydrology
rivers
Saginaw Bay (MI)
streams
water
water management

lake ice
DEF Ice formed on lakes, regardless of observed location; it is usually freshwater ice.
GS ice
. **lake ice**
. . ice floes
RT bay ice
ice formation
lakes
land ice
sea ice
water

Lake Michigan
GS lakes
. Great Lakes (North America)
. . **Lake Michigan**
RT hydrology
rivers
streams
water
water management

Lake Ontario
GS lakes
. Great Lakes (North America)
. . **Lake Ontario**
RT hydrology
rivers
streams
water
water management

Lake Pontchartrain (LA)
GS lakes
. **Lake Pontchartrain (LA)**
RT Louisiana

Lake Superior
GS lakes
. Great Lakes (North America)
. . **Lake Superior**
RT hydrology
rivers
streams
water
water management

Lake Tahoe (CA–NV)
GS lakes
. **Lake Tahoe (CA–NV)**
RT California
Nevada

Lake Texoma (OK–TX)
GS lakes
. **Lake Texoma (OK–TX)**
RT limnology
Oklahoma
reservoirs
Texas
vadose water

lakes
DEF Inland bodies of standing water occupying depressions in the Earth's surface, generally of appreciable size (larger than a pond) and too deep to permit vegetation (excluding subaqueous vegetation) to take root completely across the expanse of water; the water may be fresh or saline. The term includes expanded parts of rivers, reservoirs behind dams, or lake basins intermittently or formerly covered by water.
GS **lakes**
. Great Lakes (North America)
. . Lake Erie
. . Lake Huron
. . Lake Michigan
. . Lake Ontario
. . Lake Superior
. Great Salt Lake (UT)
. Lake Pontchartrain (LA)
. Lake Tahoe (CA–NV)
. Lake Texoma (OK–TX)
. Pyramid Lake (NV)
RT **aquifers**
bayous
beaches
coasts
Earth hydrosphere
eutrophication
inland waters
kettles (geology)
lagoons
Lake Champlain Basin (NY–VT)
lake ice
limnology
playas
ponds
regional planning
reservoirs
river basins
shoals
shorelines

springs (water)
straits
surface water
thermal pollution
water circulation
water color
water depth
water resources
waterways

Lallemand cameras
GS optical equipment
. cameras
. . Lallemand cameras
photographic equipment
. cameras
. . Lallemand cameras
RT astronomical photography
electro-optical photography
image converters
image intensifiers
image transducers
light amplifiers
spectroscopy
television cameras

Lamb waves
DEF Waves that propagate within the thickness of a thin plate, and that can only be generated at particular values of angle of incidence, frequency, and plate thickness. The velocity of the wave is dependent on the mode and the product of plate thickness and frequency.
GS elastic waves
. sound waves
. . Lamb waves
RT acoustic properties
acoustics
Sturm–Liouville theory
ultrasonic tests

Lambda rocket vehicles
GS rocket vehicles
. multistage rocket vehicles
. . Lambda rocket vehicles
. sounding rockets
. . Lambda rocket vehicles
RT solid propellant rocket engines
∞ vehicles

Lambda Tauri stars
GS celestial bodies
. stars
. . double stars
. . . binary stars
. . . . eclipsing binary stars
. . . . . Lambda Tauri stars
. . variable stars
. . . Lambda Tauri stars

Lambert law
USE **Bouguer law**

Lambert surface
RT reflection
∞ surface geometry
∞ surfaces

Lame functions
GS functions (mathematics)
. Lame functions
RT boundary value problems
differential equations

Lame wave equations
GS analysis (mathematics)
. real variables
. . differential equations
. . . Lame wave equations
wave equations
. Lame wave equations
RT acoustics
elastic waves
∞ equations
Sturm–Liouville theory
wave propagation

lamella
RT bones

lamella (metallurgy)
DEF Crystalline materials whose grains are in the form of thin sheets.
RT aluminum alloys
copper alloys
crystallography
eutectic alloys
microstructure

lamina
USE **layers**

laminar boundary layer
DEF In fluid flow, layer next to the fixed boundary. The fluid velocity is zero at the boundary layer but the molecular viscous stress is large because the velocity gradient normal to the wall is large. Used for laminar boundary layer separation and laminar flow control.
UF *laminar boundary layer separation*
laminar flow control
GS boundary layers
. laminar boundary layer
RT boundary layer combustion
boundary layer transition
compressible boundary layer
Goertler instability
hypersonic boundary layer
incompressible boundary layer
interactional aerodynamics
isothermal layers
Pohlhausen method
supersonic boundary layers
thermal boundary layer
three dimensional boundary layer
turbulent boundary layer
two dimensional boundary layer
X-21 aircraft

laminar boundary layer separation
USE **boundary layer separation**
laminar boundary layer

laminar flames
USE **flames**
laminar flow

laminar flow
DEF In fluid flow, a smooth flow in which no crossflow of fluid particles occurs between adjacent stream lines; hence, a flow conceived as made up of layers — commonly distinguished from turbulent flow. Used for laminar flames, laminar jets, Poiseuille flow, and streamline flow.
UF *laminar flames*
laminar jets
Poiseuille flow
streamline flow
GS fluid flow
. laminar flow
. . Blasius flow
. . Hartmann flow
. . stratified flow
RT aerodynamics
atmospheric turbulence
boundary layer transition
capillary flow
critical flow
Falkner–Skan equation
flow characteristics
flow geometry
flow stability
forced convection
free convection
gas flow
gas streams
inviscid flow
liquid flow
low Reynolds number
mass flow
multiphase flow
Newton pressure law
open channel flow
orifice flow
parallel flow
pipe flow
Prandtl–Meyer expansion
Rayleigh–Benard convection
Reynolds number
Roshko prediction
single-phase flow
steady flow
steam flow
Tollmien–Schlichting waves
∞ transition layers
turbulent flow
two phase flow
uniform flow
unsteady flow
viscous drag
viscous flow
wedge flow
X-21A aircraft

laminar flow airfoils
GS airfoils
. laminar flow airfoils

laminar flow control
USE **boundary layer control**
laminar boundary layer

laminar heat transfer
GS transmission
. heat transmission
. . heat transfer
. . . . laminar heat transfer
RT conductive heat transfer
convective heat transfer
thermohydraulics
turbulent heat transfer

laminar jets
USE **jet flow**
laminar flow

laminar mixing
GS mixing
. laminar mixing
RT fluid injection
gas mixtures
mixing layers (fluids)
turbulent mixing

laminar wakes
GS wakes
. laminar wakes
RT aircraft wakes
turbulent wakes

laminated materials
USE **laminates**

laminates
DEF Products made by bonding together two or more layers of material or materials. Used for laminated materials, laminations, and multilayer structures.
UF *laminated materials*
laminations
multilayer structures
GS composite structures
. **laminates**
. . Boral
. . plywood
RT bonding
boron–epoxy composites
cladding
coatings
composite materials
debonding (materials)
fabrics
fiber composites
filament winding
∞ films
formica
glass fiber reinforced plastics
honeycomb structures
hybrid composites
interlaminar stress
interlayers
∞ layers
lay-up
magnetic cores
∞ materials
matrix materials
metal bonding
metallizing
multilayer insulation
netting (materials/structures)
papers
plating
ply orientation
polymer matrix composites
prepregs
reinforced plastics
reinforced plates
sandwich structures
∞ sheets
stacking sequence (composite materials)
substrates
thermosetting resins
veneers

laminations
USE **laminates**

lamps
USE **luminaires**

LAMPS program
USE **Light Airborne Multipurpose System**

LAN (computer networks)
USE **local area networks**

Lance missile
GS missiles
. surface to surface missiles
. . **Lance missile**
RT liquid propellant rocket engines
Trailblazer 1 reentry vehicle
TX–77 engine

land
DEF In a general sense, that part of the Earth's surface that stands above mean sea level. The inclusion of Antarctica's permanent ice in calculating the land surface of the Earth is controversial.
GS **land**
. Allegheny Plateau (US)
. arid lands
. badlands
. barren land
. Cascade Range (CA–OR–WA)
. Colorado Plateau (US)
. deserts
. . Gobi desert
. . Libyan desert
. . Mojave Desert (CA)
. . Sahara Desert (Africa)
. farmlands
. grasslands
. . Llanos Orientales (Colombia)
. isthmuses
. parks
. . national parks
. . . Yellowstone National Park (ID–MT–WY)
. plains
. . coastal plains
. . flood plains
. . Llanos Orientales (Colombia)
. . pampas
. . playas
. . tundra
. rangelands
. wetlands
. . marshlands
RT capes (landforms)
desertification
desertline
peninsulas
residential areas
rural areas
rural land use
sites
sod
soils
topography

land ice
DEF Any ice masses formed from snow, rain or other freshwater on land, as ice shelves or glaciers, even though they may be floating in seas as icebergs.
UF *ice shelves*
GS ice
. **land ice**
resources
. Earth resources
. . **land ice**
RT Antarctic regions
glacial drift
glaciers
icebergs
lake ice
sea ice

land management
GS management
. resources management
. . **land management**
RT environment management
regional planning
rural land use
urban planning
wilderness

land mobile satellite service
DEF A proposed radio relay satellite system for serving thinly populated or large geographical areas.
GS mobile communication systems
. **land mobile satellite service**
RT communication satellites
ground stations
MSAT
radio communication

land surface temperature
(added February 1993)
GS surface properties
. surface temperature
. . **land surface temperature**
temperature
. surface temperature
. . **land surface temperature**
RT air land interactions
atmospheric temperature
sea surface temperature

land use
GS **land use**
. rural land use
RT AgRISTARS project
airport planning
barren land
change detection
conservation
desertification
∞ development
Earth resources
economic development
energy policy
environment management
exploitation
∞ facilities
farmlands
forest management
grasslands
industrial areas
landfills
leasing
residential areas
site selection
SPOT (French satellite)
Starsite program
suburban areas
urban development
urban planning
urban research

Landau damping
DEF The damping of a space charge wave by electrons which move at the phase velocity of the wave and gain energy transferred from the wave.
GS damping
. **Landau damping**
RT electron plasma
Landau factor
phase velocity
plasma waves
space charge

Landau factor
RT atomic energy levels
atomic theory
Landau damping
plasmas (physics)
superconductivity

Landau–Ginzburg equations
RT ∞ equations
quantum electrodynamics
superconductivity

landfills
DEF Disposal sites for solid wastes which are buried in layers of earth.
RT industrial wastes
land use

methane
solid wastes
waste disposal
waste management
waste utilization
water pollution

landforms
DEF Any physical recognizable forms or features of the Earth's surface, having characteristic shapes, and produced by natural causes. Landforms include major forms such a plains, plateaus, and mountains and minor forms such as hills, valleys, slopes, glacial drift, and dunes. Taken together, landforms make up the surface configuration of the Earth.
GS **landforms**
. arroyos
. barriers (landforms)
. . Outer Banks (NC)
. . reefs
. bars (landforms)
. beds (geology)
. . salt beds
. bridges (landforms)
. calderas
. canals
. canyons
. . Grand Canyon (AZ)
. capes (landforms)
. . Cape Hatteras (NC)
. cones (volcanoes)
. cusps (landforms)
. Death Valley (CA)
. deltas
. . Mississippi Delta (LA)
. . Rhone Delta (France)
. divides (landforms)
. dunes
. escarpments
. fans (landforms)
. fiords
. flats (landforms)
. . tidal flats
. gaps (geology)
. inlets (topography)
. . bayous
. . Cook Inlet (AK)
. inliers (landforms)
. island arcs
. islands
. . Aleutian Islands (US)
. . Assateague Island (MD–VA)
. . atolls
. . Azores
. . Bahrain
. . Bermuda
. . Canary Islands
. . Cyprus
. . Greenland
. . Hawaii
. . Iceland
. . Indonesia
. . Ireland
. . keys (islands)
. . Long Island (NY)
. . Madagascar
. . Maldive Islands
. . Malta
. . Mauritius
. . Merritt Island (FL)
. . Newfoundland
. . nunataks
. . Pacific Islands
. . . Guam
. . . Japan
. . . Johnston Island
. . . Kurile Islands
. . . New Guinea (island)
. . . New Zealand
. . . Philippines
. . . Samoa
. . Prince Edward Island
. . Seychelles
. . Sicily
. . Tasmania
. . Wallops Island
. . West Indies
. . . Antigua and Barbuda
. . . Bahamas
. . . Barbados
. . . Cuba
. . . Dominica
. . . Grenada
. . . Guadeloupe
. . . Haiti
. . . Jamaica
. . . Lesser Antilles
. . . Martinique
. . . Puerto Rico
. . . Trinidad and Tobago
. . . Virgin Islands
. isthmuses
. lagoons
. Magdalena–Cauca Valley (Colombia)
. massifs
. mountains
. . Adirondack Mountains (NY)
. . Alps Mountains (Europe)
. . Andes Mountains (South America)
. . Appalachian Mountains (North America)
. . Bighorn Mountains (MT–WY)
. . Black Hills (SD–WY)
. . Carpathian Mountains (Europe)
. . Cascade Range (CA–OR–WA)
. . Caucasus Mountains (U.S.S.R.)
. . coastal ranges (CA)
. . Great Smoky Mountains (NC–TN)
. . Himalayas
. . Peninsular Ranges (CA)
. . Pyrenees Mountains (Europe)
. . Rocky Mountains (North America)
. . San Juan Mountains (CO)
. . Sierra Nevada Mountains (CA)
. . Wind River Range (WY)
. . Wrangell Mountains (AK)
. muskegs
. outliers (landforms)
. peaks (landforms)
. . Pike's Peak (CO)
. peninsulas
. . Delmarva Peninsula (DE–MD–VA)
. Phoenix quadrangle (AZ)
. plains
. . coastal plains
. . flood plains
. . Llanos Orientales (Colombia)
. . pampas
. . playas
. . tundra
. ravines
. St Lawrence Valley (North America)
. steppes
. structural basins
. . cirques (landforms)
. . Great Basin (US)
. . Kalahari Basin (Africa)
. . karst
. . . sinkholes
. . kettles (geology)
. . Lake Champlain Basin (NY–VT)
. . river basins
. . . Atchafalaya River Basin (LA)
. . . Chena River Basin (AK)
. . . Columbia River Basin (ID–OR–WA)
. . . Delaware River Basin (US)
. . . Feather River Basin (CA)
. . . Missouri River Basin (US)
. . . Susquehanna River Basin (MD–NY–PA)
. . . Wabash River Basin (IL–IN–OH)
. . . wadis
. . watersheds
. . Williston Basin (North America)
. terraces (landforms)
. . plateaus
. . . Allegheny Plateau (US)
. . . Colorado Plateau (US)
. . . Great Basin (US)
. . . . mesas
. . . . . buttes
. . . . piedmonts
. . . . . Central Piedmont (US)
. volcanoes
. . Mars volcanoes
RT archipelagoes
crossbedding (geology)
ditches
earthquake resistance
∞ faults
geological faults
glacial drift
landmarks
landslides
∞ platforms
∞ ridges
seamounts
slopes
structural properties (geology)
terrain
topography

landing
GS **landing**
. aircraft landing
. . crash landing
. . . ditching (landing)
. . skid landings
. blind landing
. glide landings
. . horizontal spacecraft landing
. hard landing
. soft landing
. spacecraft landing
. . horizontal spacecraft landing
. . lunar landing
. . planetary landing
. . . Mars landing
. touchdown
. vertical landing
. water landing
. . ditching (landing)
RT air traffic control
approach
approach and landing tests (STS)
arrivals
guidance (motion)
instrument flight rules
instrument landing systems
maneuvers
runways
takeoff
visual flight

landing aids
UF *landing systems*
GS **landing aids**

. airport beacons
. . discrete address beacon system
. airport lights
. . runway lights
. arresting gear
. instrument landing systems
. . all–weather landing systems
. landing instruments
. . approach indicators
. landing radar
. microvision landing aid
. microwave landing systems
. . microwave scanning beam landing system
RT∞ aids
air traffic control
air traffic controllers (personnel)
airborne radar approach
aircraft equipment
aircraft instruments
aircraft landing
aircraft safety
airport towers
airports
antiskid devices
approach
approach control
automatic pilots
enhanced vision
ground based control
ground support equipment
head–up displays
heliports
instrument approach
military air facilities
National Aviation System
navigation aids
PLAT system
radar approach control
radio beacons
runways
safety devices
solar compasses

landing gear
DEF The apparatus comprising those components of an aircraft or spacecraft that support and provide mobility for the craft on land, water, or other surface. The landing gear consists of wheels, floats, skis,bogies, and treads, or other devices, together with all associated struts, bracing, or shock absorbers. Used for retractable landing gear.
UF *retractable landing gear*
RT aircraft parts
aircraft tires
airframes
∞ bicycle
brakes (for arresting motion)
carriages
fairings
floats
∞ gear
hydrofoils
nose wheels
retractable equipment
self alignment
shock absorbers
skidding
skis
spray ingestion
tires
undercarriages
vehicle wheels
wheel brakes
wheels

landing instruments
GS landing aids
. **landing instruments**
. . approach indicators
RT air traffic control
aircraft equipment
aircraft instruments
altimeters
automatic control
blind landing
flight instruments
instrument landing systems
manual control
measuring instruments
radar approach control
speed indicators

landing loads
GS loads (forces)
. dynamic loads
. . transient loads
. . . **landing loads**
RT deceleration
impact loads
shock loads
structural design criteria

landing mats
RT aircraft landing
airports
military air facilities
runways

landing modules
GS modules
. spacecraft modules
. . **landing modules**
. . . lunar landing modules
. . . . Lunar Module
. . . . . Apollo lunar experiment module
. . . . . LSSM
. . . . . Lunar Module 5
. . . . . Lunar Module 7
. . . Mars Excursion Module
soft landing spacecraft
. **landing modules**
. . lunar landing modules
. . . Lunar Module
. . . . Apollo lunar experiment module
. . . . LSSM
. . . . Lunar Module 5
. . . . Lunar Module 7
. . Mars Excursion Module
spacecraft components
. spacecraft modules
. . **landing modules**
. . . lunar landing modules
. . . . Lunar Module
. . . . . Apollo lunar experiment module
. . . . . LSSM
. . . . . Lunar Module 5
. . . . . Lunar Module 7
. . . Mars Excursion Module
RT Apollo spacecraft
interplanetary spacecraft
launch vehicles
maneuverable spacecraft
manned spacecraft
reentry vehicles
reusable spacecraft
space capsules
spacecraft docking modules

landing radar
GS landing aids
. **landing radar**
radar
. **landing radar**
RT air traffic control
aircraft landing
aircraft safety
approach control
instrument approach
radar approach control

landing simulation
GS simulation
. **landing simulation**
RT altitude simulation
atmospheric entry simulation
computerized simulation
flight simulation
spacecraft landing
training simulators

landing sites
GS sites
. **landing sites**
. . lunar landing sites
RT heliports
Mars Pathfinder
recovery zones
runways
trajectory control

landing speed
GS rates (per time)
. **landing speed**
velocity
. **landing speed**
RT high speed
low speed

landing systems
USE **landing aids**

landmarks
RT landforms
terrain
topography

Landsat 1
UF *Earth Resources Technology Satellite 1*
ERTS–A
GS artificial satellites
. Landsat satellites
. . **Landsat 1**

Landsat 2
UF *Earth Resources Technology Satellite B*
ERTS–B
GS artificial satellites
. Landsat satellites
. . **Landsat 2**

Landsat 3
DEF The third Landsat satellite (Landsat C) successfully launched and in orbit. Used for Earth Resources Technology Satellite C and ERTS–C.
UF *Earth Resources Technology Satellite C*
ERTS–C
GS artificial satellites
. Landsat satellites
. . **Landsat 3**
RT plasma interaction experiment

Landsat 4
UF *Earth Resources Technology Satellite D*
ERTS–D
GS artificial satellites
. Landsat satellites
. . **Landsat 4**
RT thematic mappers (LANDSAT)

Landsat 5
GS artificial satellites
. Landsat satellites
. . **Landsat 5**
RT thematic mappers (LANDSAT)

Landsat 6
(added April 1995)
GS **artificial satellites**
. Landsat satellites
. . **Landsat 6**
RT Earth Observing System (EOS)
remote sensing
spectral resolution

Landsat 7
(added April 1995)
GS artificial satellites
. Landsat satellites
. . **Landsat 7**
RT Earth Observing System (EOS)
remote sensing
spectral resolution

Landsat E
UF *Earth Resources Technology Satellite E*
EOS-A
ERTS-E
GS artificial satellites
. Landsat satellites
. . **Landsat E**

Landsat F
UF *Earth Resources Technology Satellite F*
EOS-B
ERTS-F
GS artificial satellites
. Landsat satellites
. . **Landsat F**

Landsat follow-on missions
UF *LFO*
RT ∞ **missions**
multimission modular spacecraft

Landsat satellites
UF *Earth Resources Technology Satellites*
ERTS
GS artificial satellites
. **Landsat satellites**
. . Landsat 1
. . Landsat 2
. . Landsat 3
. . Landsat 4
. . Landsat 5
. . Landsat 6
. . Landsat 7
. . Landsat E
. . Landsat F
RT AgRISTARS project
Earth observations (from space)
Earthnet
Mapsat
NASA programs
oceanography
satellite observation
SEASAT 1
SEASAT program
SEASAT satellites
SEASAT-B satellite
Synchronous Earth Observatory satellite

landscape
USE **terrain**
topography

landslides
DEF A general term covering a wide variety of mass movement landforms and processes involving the downslope transport, under gravitational influence, of soil and rock material en masse. Usually the displaced material moves over a relatively confined zone or surface of shear.
GS Earth movements
. **landslides**
RT cliffs
flood damage
landforms
rain erosion
rocks
slopes
soil erosion
soils
storm damage

lanes
USE **paths**

Langevin formula
RT dispersing
ferromagnetism
magnetic moments

Langley complex coordinator
GS simulators
. environment simulators
. . space simulators
. . . **Langley complex coordinator**
RT flight simulators
gravitational effects
rotating environments
space environment simulation
weightlessness simulation

Langmuir probes
USE **electrostatic probes**

Langmuir turbulence
(added August 1994)
GS turbulence
. magnetohydrodynamic turbulence
. . plasma turbulence
. . . **Langmuir turbulence**
RT Auger effect
magnetohydrodynamic stability
plasma dynamics
plasma heating
plasma oscillations
plasma waves
thin films

Langmuir-Blodgett films
(added March 1993)
GS thin films
. monomolecular films
. . **Langmuir-Blodgett films**
RT coatings
∞ films
integrated optics
molecular electronics
polymeric films

language programming
GS computer programming
. **language programming**
RT computer assisted instruction
data processing
high level languages
languages
machine oriented languages
machine translation
symbolic programming
∞ translators

languages
GS **languages**
. command languages
. . query languages
. document markup languages
. English language
. hardware description languages
. programming languages
. . ALGOL
. . APL (programming language)
. . Assembly language
. . . autocoders
. . . COMPASS (programming language)
. . . MAP (programming language)
. . BASIC (programming language)
. . Cobol
. . COGO (programming language)
. . context free languages
. . Forth (programming language)
. . FORTRAN
. . HAL/S (language)
. . high level languages
. . . Ada (programming language)
. . . C (programming language)
. . . . C++ (programming language)
. . LISP (programming language)
. . machine oriented languages
. . natural language (computers)
. . Pascal (programming language)
. . PL/1
. . Prolog (programming language)
RT **alphabets**
articulation (speech)
coding
communication theory
grammars
language programming
linguistics
machine translation
orthography
phonemes
phonemics
phonetics
semantics
sentences
speech
symbols
syntax
translating
verbal communication
vowels
words (language)

lanthanide series metals
USE **rare earth elements**

lanthanum
GS chemical elements
. rare earth elements
. . **lanthanum**
. . . lanthanum isotopes
metals
. rare earth elements
. . **lanthanum**
. . . lanthanum isotopes
RT didymium

lanthanum 140
USE **lanthanum isotopes**

lanthanum alloys
GS alloys
. rare earth alloys
. . **lanthanum alloys**

lanthanum chlorides
GS halogen compounds

. chlorine compounds
. . chlorides
. . . **lanthanum chlorides**
. halides
. . chlorides
. . . **lanthanum chlorides**
. . metal halides
. . . **lanthanum chlorides**
lanthanum compounds
. **lanthanum chlorides**

lanthanum compounds
GS **lanthanum compounds**
. lanthanum chlorides
. lanthanum fluorides
. lanthanum oxides
. lanthanum tellurides
RT∞ chemical compounds
∞ metal compounds

lanthanum fluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **lanthanum fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **lanthanum fluorides**
. . metal halides
. . . metal fluorides
. . . . **lanthanum fluorides**
lanthanum compounds
. **lanthanum fluorides**

lanthanum isotopes
UF *lanthanum 140*
GS chemical elements
. nuclides
. . isotopes
. . . **lanthanum isotopes**
. rare earth elements
. . lanthanum
. . . **lanthanum isotopes**
metals
. rare earth elements
. . lanthanum
. . . **lanthanum isotopes**

lanthanum oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **lanthanum oxides**
lanthanum compounds
. **lanthanum oxides**

lanthanum tellurides
GS chalcogenides
. tellurides
. . **lanthanum tellurides**
lanthanum compounds
. **lanthanum tellurides**
rare earth compounds
. **lanthanum tellurides**
tellurium compounds
. tellurides
. . **lanthanum tellurides**

Laos
GS nations
. **Laos**
RT Asia

lap joints
GS joints (junctions)
. **lap joints**
RT bolted joints
butt joints
metal joints
riveted joints
soldered joints
welded joints

Laplace equation
RT∞ equations
harmonic functions
partial differential equations
Poisson equation
Stokes–Beltrami equation

Laplace operators
USE **Laplace transformation**

Laplace transformation
UF *Laplace operators*
GS analysis (mathematics)
. functional analysis
. . integral transformations
. . . **Laplace transformation**
functions (mathematics)
. **Laplace transformation**
transformations (mathematics)
. integral transformations
. . **Laplace transformation**
RT differential equations
operators (mathematics)

lapse rate
DEF The decrease of an atmospheric variable with height, the variable being temperature, unless otherwise specified. The term applies ambiguously to the environmental lapse rate and the process lapse rate, and the meaning must often be ascertained from the context.
RT humidity
temperature
temperature inversions
tephigrams

LARA aircraft
USE **CONN aircraft**

large aperture seismic array
GS arrays
. **large aperture seismic array**
RT Earth movements
earthquakes
measuring instruments
seismic waves
seismology

Large Area Crop Inventory Experiment
RT agriculture
agrophysical units
crop growth
crop inventories
∞ crops
Earth resources
Earth Resources Program
farm crops
inventories

Large Deployable Reflector
(added September 1988)
UF *LDR (telescope)*
GS **artificial satellites**
. scientific satellites
. . astronomical satellites
. . . **Large Deployable Reflector**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Large Deployable Reflector**
telescopes
. infrared telescopes
. . **Large Deployable Reflector**
. reflecting telescopes
. . **Large Deployable Reflector**
. spaceborne telescopes
. . **Large Deployable Reflector**
RT infrared astronomy
large space structures
reflectors
space erectable structures
submillimeter waves

large eddy simulation
(added October 1997)
UF *LES (mathematics)*
GS simulation
. **large eddy simulation**
RT atmospheric models
computational fluid dynamics
dynamic models
eddy viscosity
mathematical models
Navier–Stokes equation
Reynolds averaging
turbulence models
turbulent flow
vortices

Large Infrared Telescope on Spacelab
USE **LIRTS (telescope)**

large scale integration
UF *LSI*
GS circuits
. integrated circuits
. . **large scale integration**
microelectronics
. **large scale integration**
RT application specific integrated circuits
chips (electronics)
DTL integrated circuits
electronic packaging
linear integrated circuits
medium scale integration
microminiaturization
microprocessors
molecular electronics
printed circuits
TTL integrated circuits
very large scale integration
VHSIC (circuits)

large space structures
RT Columbus space station
continuum modeling
expandable structures
flexible spacecraft
hoop column antennas
International Space Station
intraorbit transfer vehicles
Large Deployable Reflector
laser gyroscopes
maypole antennas
megamechanics
orbital servicing
orbital space tests
self shadowing
shape control
smart structures
solar power satellites
space erectable structures
Space Operations Center (NASA)
Space Station Freedom
space station structures
space stations
space technology experiments

spacecraft structures
∞ structures

Large Space Telescope
USE **Hubble Space Telescope**

LARGOS satellite
GS artificial satellites
. geodetic satellites
. . **LARGOS satellite**
RT Explorer 29 satellite
Explorer 36 satellite
GEOS 1 satellite
GEOS 2 satellite
GEOS 3 satellite

Larissa
(added July 1995)
DEF A natural satellite of Neptune, orbiting at a mean distance of 73,600 kilometers.
GS celestial bodies
. natural satellites
. . Neptune satellites
. . . **Larissa**
RT Neptune (planet)

Larmor precession
GS gyration
. precession
. . **Larmor precession**
RT cyclotron frequency
cyclotron radiation

Larmor radius
DEF For a charged particle moving transversely in a uniform magnetic field, the radius of curvature of the projection of its path on a plane perpendicular to the field. Named after the English mathematician Sir Joseph Larmor (1857–1942).
GS dimensions
. radii
. . **Larmor radius**
geometry
. Euclidean geometry
. . radii
. . . **Larmor radius**
RT cyclotron radiation
gyromagnetism
plasma physics
precession

larvae
GS **larvae**
. bollworms
. silkworms
RT animals
arthropods
infestation
insects
invertebrates
pupa
worms

larynx
GS anatomy
. respiratory system
. . **larynx**
. . . glottis
. . . vocal cords
RT cartilage

laser ablation
(added February 1992)
GS ablation
. **laser ablation**
utilization
. laser applications
. . **laser ablation**
RT laser annealing
laser beams
laser damage
laser drilling
laser heating
laser plasmas
laser target interactions
laser welding

laser altimeters
GS measuring instruments
. distance measuring equipment
. . altimeters
. . . **laser altimeters**
RT aircraft instruments
altitude control
∞ instruments
lasers
optical radar
satellite instruments
spacecraft instruments

laser anemometers
DEF Measuring instruments in which the wind being measured passes through two perpendicular light beams and the resulting change in velocity of one or both beams is measured.
GS measuring instruments
. anemometers
. . **laser anemometers**
RT flow velocity
velocity measurement

laser annealing
DEF Rapid heating of metals and/or alloys with the use of lasers.
GS heat treatment
. annealing
. . **laser annealing**
utilization
. laser applications
. . **laser annealing**
RT heating
laser ablation
laser cutting
lasers
normalizing (heat treatment)
recrystallization
simulated annealing
tempering

laser applications
GS utilization
. **laser applications**
. . laser ablation
. . laser annealing
. . laser cooling
. . laser cutting
. . laser deposition
. . . pulsed laser deposition
. . laser drilling
. . laser fusion
. . laser guidance
. . laser guide stars
. . laser heating
. . laser induced fluorescence
. . laser interferometry
. . laser machining
. . laser microscopy
. . laser power beaming
. . laser propulsion
. . laser spectroscopy
. . . optogalvanic spectroscopy
. . laser weapons
. . laser welding
RT airborne lasers
data transmission
hole burning
metal working
optical data storage materials
optical disks
optical radar
optical relay systems
photoacoustic spectroscopy
plasmadynamic lasers
production engineering
rapid ballistics identification
spaceborne lasers
speckle holography
speckle interferometry
technology utilization
ultrashort pulsed lasers

laser arrays
(added January 1991)
DEF A group of laser emitters arranged to give a desired combined output.
GS arrays
. **laser arrays**
RT coupled modes
far fields
laser beams
laser modes
laser outputs
lasers
linear arrays
near fields
optical coupling
phased arrays
semiconductor lasers
stimulated emission devices
surface emitting lasers

laser beam defocusing
USE **thermal blooming**

laser beams
(added September 1988)
SN [LIMITED TO THE TRANSMISSION AND INTERACTIONS OF LASER RADIATION. FOR THE QUANTITATIVE AND QUALITATIVE CHARACTERISTICS OF THE RADIATION PRODUCED BY A LASER USE 'LASER OUTPUTS']
UF *laser radiation*
GS beams (radiation)
. light beams
. . **laser beams**
coherent radiation
. coherent electromagnetic radiation
. . **laser beams**
electromagnetic radiation
. coherent electromagnetic radiation
. . **laser beams**
. light beams
. . **laser beams**
RT beam steering
beamforming
four-wave mixing
holographic optical elements
laser ablation
laser arrays

laser cavities
UF *optical generators*
GS cavities
. **laser cavities**
RT amplifiers
laser stability
lasers
light amplifiers
∞ optics
pulse generators
semiconductor lasers
solid state devices
solid state lasers
stimulated emission devices

laser communication
USE **optical communication**

laser cooling
(added March 1995)
SN ((COOLING OF ATOMIC PARTICLES BY LASERS, NOT COOLING OF LASERS))
GS cooling
. **laser cooling**
utilization
. laser applications
. . **laser cooling**
RT atomic energy levels
optical pumping
Penning effect
quenching (atomic physics)
trapped particles

laser cutting
DEF The cutting of material by means of lasers.
GS cutting
. **laser cutting**
utilization
. laser applications
. . **laser cutting**
RT blanking (cutting)
cutters
focusing
forming techniques
laser annealing
laser drilling
laser heating
laser machining
laser outputs
laser target interactions
machining
∞ materials science
metal cutting
micromachining
splitting
thermal blooming

laser damage
GS damage
. radiation damage
. . **laser damage**
radiation effects
. radiation damage
. . **laser damage**
RT burns (injuries)
laser ablation
pulsed radiation
radiation hazards

laser deposition
(added December 1992)
GS deposition
. **laser deposition**
. . pulsed laser deposition
utilization
. laser applications
. . **laser deposition**
. . . pulsed laser deposition
RT crystal growth
epitaxy
excimer lasers
laser heating
superconducting films
vapor deposition

laser diodes
USE **semiconductor lasers**

laser doppler velocimeters
GS measuring instruments
. **laser doppler velocimeters**
optical equipment
. **laser doppler velocimeters**
RT flow measurement
nonintrusive measurement
optical measuring instruments
particle image velocimetry
velocity measurement

laser drilling
GS drilling
. **laser drilling**
utilization
. laser applications
. . **laser drilling**
RT focusing
laser ablation
laser cutting
micromachining

laser fusion
GS utilization
. laser applications
. . **laser fusion**
RT aspheric optics
∞ fusion
glass lasers
high power lasers
inertial fusion (reactor)
Nova Laser System
plasmas (physics)
Shiva laser system

Laser Geodynamic Satellite
USE **LAGEOS (satellite)**

laser guidance
DEF Guidance system for rockets or projectiles, utilizing a laser beam for a precise trajectory to a designated target.
GS guidance (motion)
. terminal guidance
. . **laser guidance**
utilization
. laser applications
. . **laser guidance**
RT computer programs
homing devices
impact prediction
laser guide stars
missile control

laser guide stars
(added November 1994)
DEF Use of a laser to excite either Rayleigh backscattering or the mesospheric sodium layer to create artificial references for adaptive optics.
GS utilization
. laser applications
. . **laser guide stars**
RT adaptive optics
celestial reference systems
image processing
instrument compensation
laser guidance
reference stars
star trackers

laser gyroscopes
DEF Ring-laser angular rotation sensors for stabilizing and controlling large space structures, for space vehicle guidance, etc.
GS gyroscopes
. **laser gyroscopes**
RT large space structures
optical gyroscopes
Sagnac effect
∞ sensors
spacecraft guidance
stabilization

laser heating
GS heating
. **laser heating**
utilization
. laser applications
. . **laser heating**
RT heat sources
laser ablation
laser cutting
laser deposition
pulse heating
pulsed laser deposition
pulsed lasers
thermal blooming
YAG lasers

laser induced fluorescence
DEF Emission of electromagnetic radiation that is caused by the flow of laser radiation into the emitting body and which ceases abruptly with the excitation. Used for LIF (fluorescence).
UF *LIF (fluorescence)*
GS emission
. light emission
. . luminescence
. . . fluorescence
. . . . **laser induced fluorescence**
utilization
. **laser applications**
. . **laser induced fluorescence**
RT electromagnetic absorption
excitation
extinction
irradiation
laser outputs
laser spectroscopy
Mossbauer effect
phosphors
photoionization
photoluminescence
plasma radiation

laser interferometry
DEF The design and use of interferometers in which a laser is the light source. The monochromaticity and brilliance of the laser light enables the differentiation between interfering beams of hundreds of meters, in contrast to a maximum of 20 centimeters for the classical interferometers.
GS interferometry
. **laser interferometry**
utilization
. laser applications
. . **laser interferometry**
RT Sagnac effect

laser machining
(added June 1995)
UF *laser micromachining*
GS machining
. **laser machining**
utilization
. laser applications
. . **laser machining**
RT laser cutting
metal working

laser materials
RT alexandrite
fiber lasers
gadolinium-gallium garnet
maser materials
∞ materials
metal vapor lasers
quantum well lasers
rhodamine

sulfur hexafluoride
xenon chloride lasers
xenon fluoride lasers
YAG lasers

laser micromachining
USE **laser machining**

laser microscopy
DEF The application of a laser microscope having a ceramic tube in which a metal vapor is formed at 1600 degrees C. Copper (or other metal atoms) are excited and amplify light so that, when used with a projection microscope, the object to be magnified is illuminated. The power of the emitted beam on the screen remains constant.
GS microscopy
. **laser microscopy**
utilization
. **laser applications**
. . **laser microscopy**
RT electro-optics
light amplifiers
metal vapor lasers
microelectronics

laser mode locking
GS locking
. **laser mode locking**
RT injection locking
lasers
optical coupling

laser modes
GS modes
. **laser modes**
RT axial modes
field mode theory
helium-neon lasers
laser arrays
laser stability
optical resonators
TEA lasers
waveguide lasers
wavelengths

laser outputs
SN (LIMITED TO THE QUANTITATIVE AND QUALITATIVE CHARACTERISTICS OF THE RADIATION PRODUCED BY A LASER. FORTHE TRANSMISSION AND INTERACTIONS OF LASER RADIATION USE 'LASER BEAMS')
GS output
. **laser outputs**
RT atmospheric lasers
∞ coherence
coherent light
diffraction radiation
distributed feedback lasers
dye lasers
excimer lasers
frequency pulling
gasdynamic lasers
glass lasers
helium-neon lasers
high power lasers
holographic interferometry
laser arrays
laser cutting
laser induced fluorescence
laser stability
maser outputs
Nova Laser System
optical resonators
optical waveguides
phase matching
photon beams
picosecond pulses
pulse duration
quantum efficiency
radiant flux density
Shiva laser system
speckle patterns
thermal blooming
tube lasers
two-wavelength lasers
ultraviolet lasers
volumetric efficiency
waveguide lasers
wavelengths
x ray lasers
xenon chloride lasers
xenon fluoride lasers
YAG lasers

laser plasma interactions
DEF The results of the actions of laser beams on electrically ducting fluids, such as plasmas or ionized gases.
GS electromagnetic interactions
. plasma-electromagnetic interaction
. . **laser plasma interactions**
plasma interactions
. plasma-electromagnetic interaction
. . **laser plasma interactions**
RT backscattering
electromagnetic coupling
glass lasers
∞ interactions
plasmas (physics)
theta pinch

laser plasmas
SN (EXCLUDES LASER OUTPUTS)
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **laser plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **laser plasmas**
RT inertial fusion (reactor)
laser ablation
lasers

laser power beaming
(added November 1989)
DEF Space-to-Earth power transmission utilizing a laser.
UF *power transmission (lasers)*
GS power beaming
. **laser power beaming**
utilization
. laser applications
. . **laser power beaming**
RT energy conversion
laser propulsion
microwave power beaming
microwave transmission
satellite power transmission
spacecraft power supplies

laser propulsion
DEF The use of high power lasers for aircraft, rocket, or spacecraft propulsion by indirect conversion of laser heated propellants or working fluids to produce thrust; direct thrust generation with laser light pressure on the vehicle; direct conversion of laser energy into electricity for propulsion.
GS propulsion
. electric propulsion
. . **laser propulsion**
. low thrust propulsion
. . photonic propulsion
. . . **laser propulsion**
. spacecraft propulsion
. . photonic propulsion
. . . **laser propulsion**
utilization
. laser applications
. . **laser propulsion**
RT aircraft engines
hybrid propulsion
laser power beaming
optical pumping
power beaming
propulsion system configurations
propulsive efficiency
Rankine cycle
rocket engines
spacecraft propulsion
thermodynamic cycles

laser pumping
DEF The application of a laser beam of appropriate frequency to a laser medium so that absorption of the radiation increases the population of atoms or molecules in higher energy states.
GS optical pumping
. **laser pumping**
RT fiber lasers
lasers
maser pumping
∞ pumping
rare gas-halide lasers
solar-pumped lasers
stimulated emission devices
wiggler magnets

laser radar
USE **optical radar**

laser radiation
USE **laser beams**

laser range finders
GS measuring instruments
. distance measuring equipment
. . range finders
. . . optical range finders
. . . . **laser range finders**
. optical measuring instruments
. . optical range finders
. . . **laser range finders**
optical equipment
. optical measuring instruments
. . optical range finders
. . . **laser range finders**
RT LAGEOS (satellite)
lunar rangefinding
lunar retroreflectors
navigation aids
navigation instruments

laser rangefinder
RT airborne lasers
range finders
rangefinding
tracking (position)

laser spectrometers
DEF Spectrometers that use a laser.
GS measuring instruments
. spectrometers
. . **laser spectrometers**
RT absorption spectra
infrared spectroscopy

laser spectroscopy

laser spectroscopy
DEF The use of lasers for spectroscopic analysis, particularly in Raman spectroscopy.
GS spectroscopy
. optical emission spectroscopy
. . **laser spectroscopy**
. . . optogalvanic spectroscopy
utilization
. laser applications
. . **laser spectroscopy**
. . . optogalvanic spectroscopy
RT chemical analysis
laser induced fluorescence
laser spectrometers
photoacoustic spectroscopy
spectroscopic analysis
spectrum analysis

laser stability
DEF Characteristic of a laser beam free from oscillations.
GS stability
. **laser stability**
RT continuous wave lasers
frequency pulling
frequency stability
laser cavities
laser modes
laser outputs

laser target designators
DEF Laser equipment aboard spacecraft for identifying satellites, missiles, and objects in space.
RT∞ detectors
missile tracking
satellite tracking
target recognition
targets

laser target interactions
DEF Interactions where lasers are used to produce heating, fusion, or damage in targets.
RT∞ interactions
laser ablation
laser cutting
lasers
pulsed lasers
targets

laser targets
DEF Objects subjected to laser radiation, especially for laser fusion applications.
GS targets
. **laser targets**
RT glass lasers
lasers

laser weapons
DEF Military applications of high power lasers (mainly gasdynamic and chemical mixing lasers).
GS utilization
. laser applications
. . **laser weapons**
weapon systems
. **laser weapons**
weapons
. **laser weapons**
RT fusion weapons
lasers
military technology
space weapons
stimulated emission devices

laser welding
DEF Microspot welding with a laser beam.
GS utilization
. laser applications
. . **laser welding**
welding
. fusion welding
. . **laser welding**
RT bonding
heating
laser ablation
pulsed lasers
soldering

laser windows
GS windows (intervals)
. **laser windows**
RT bandwidth
energy bands
lasers

lasers
DEF Devices for producing light by emission of energy stored in a molecular or atomic system when stimulated by an input signal. (From Light Amplification by Stimulated Emission of Radiation.) Used for Fabry–Perot lasers, natural lasers, and optical masers.
UF *Fabry–Perot lasers*
natural lasers
optical masers
GS stimulated emission devices
. **lasers**
. . airborne lasers
. . argon lasers
. . atmospheric lasers
. . carbon lasers
. . chemical lasers
. . . HCL lasers
. . . . HCL argon lasers
. . . chemical oxygen–iodine lasers
. . continuous wave lasers
. . distributed feedback lasers
. . free electron lasers
. . gamma ray lasers
. . gas lasers
. . . carbon dioxide lasers
. . . carbon monoxide lasers
. . . DF lasers
. . . excimer lasers
. . . HCL lasers
. . . . HCL argon lasers
. . . HCN lasers
. . . helium–neon lasers
. . . HF lasers
. . . nitrogen lasers
. . . rare gas–halide lasers
. . . . krypton fluoride lasers
. . . . xenon chloride lasers
. . . . xenon fluoride lasers
. . . TEA lasers
. . . ultraviolet lasers
. . gasdynamic lasers
. . glass lasers
. . high power lasers
. . . Nova Laser System
. . . Shiva laser system
. . infrared lasers
. . iridium lasers
. . iodine lasers
. . . chemical oxygen–iodine lasers
. . liquid lasers
. . metal vapor lasers
. . neodymium lasers
. . nuclear pumped lasers
. . organic lasers
. . . dye lasers
. . plasmadynamic lasers
. . pulsed lasers
. . . Q switched lasers
. . . ultrashort pulsed lasers
. . . ultraviolet lasers
. . Raman lasers
. . ring lasers
. . semiconductor lasers
. . . aluminum gallium arsenide lasers
. . . gallium arsenide lasers
. . . quantum well lasers
. . . YLF lasers
. . solar–pumped lasers
. . solid state lasers
. . . aluminum gallium arsenide lasers
. . . DBR lasers
. . . fiber lasers
. . . gallium arsenide lasers
. . . quantum well lasers
. . . ruby lasers
. . . YAG lasers
. . . YLF lasers
. . spaceborne lasers
. . surface emitting lasers
. . tunable lasers
. . two–wavelength lasers
. . waveguide lasers
. . . fiber lasers
. . x ray lasers
RT alkali vapor lamps
amplifiers
beam switching
∞ coherence
coherent electromagnetic radiation
coherent light
electron pumping
gadolinium–gallium garnet
garnets
hole burning
holography
infrared windows
interplanetary communication
interstellar masers
Kerr electrooptical effect
laser altimeters
laser annealing
laser arrays
laser cavities
laser mode locking
laser plasmas
laser pumping
laser target interactions
laser targets
laser weapons
laser windows
lasing
light amplifiers
light modulation
light sources
light transmission
lunar communication
masers
microballoons
molecular oscillators
nuclear pumping
optical communication
optical data processing
optical memory (data storage)
optical pumping
optical resonators
∞ optics
phase matching
photodiodes
photonics
pulse generators
pulsed radiation

quantum amplifiers
quantum electronics
rapid ballistics identification
Senarmont polariscopes
solid state devices
space communication
stimulated emission
thermal blooming
threshold currents
transient oscillations
traveling wave modulation

lasing
DEF Generation of visible or IR light waves having very nearly a single frequency by pumping or exciting electrons into high energy states in a stimulated emission device (laser).
RT distributed feedback lasers
electron transitions
excimer lasers
hole burning
krypton fluoride lasers
lasers
nitrogen lasers
optical transition
rare gas–halide lasers
stimulated emission devices
surface emitting lasers

LASV
USE **F-111 aircraft**

latch-up
DEF A p–n–p–n self-sustaining low impedance state which is a type of electronic malfunction.
RT CMOS
electrical impedance
integrated circuits
p–n–p–n junctions
switching circuits

latches
DEF Devices that fasten one thing to another, as a rocket to a launcher, but are subject to ready release so that things may be separated.
RT fasteners
holders
linkages
pins

late stars
GS celestial bodies
. stars
. . late stars
. . . cool stars
. . . . carbon stars
. . . . flare stars
. . . . K stars
. . . . M stars
. . . . . Van Biesbroeck star
. . . . Mira variables
. . . . . Omicron Ceti star
. . . . S stars
RT asymptotic giant branch stars
dwarf stars
early stars
giant stars
main sequence stars
red dwarf stars
red giant stars
stellar evolution
subgiant stars

lateness
RT delay
scheduling

latent heat
DEF The unit quantity of heat required for isothermal change in a state of a unit mass of matter. Latent heat is termed heat of fusion, heat of sublimation, heat of vaporization, depending on the change of state involved.
GS chemical properties
. thermochemical properties
. . **latent heat**
. . . heat of fusion
. . . heat of vaporization
heat
. enthalpy
. . **latent heat**
. . . heat of fusion
. . . heat of vaporization
thermodynamic properties
. enthalpy
. . **latent heat**
. . . heat of fusion
. . . heat of vaporization
. thermochemical properties
. . **latent heat**
. . . heat of fusion
. . . heat of vaporization
. thermophysical properties
. . **latent heat**
. . . heat of fusion
. . . heat of vaporization

latent heat of fusion
USE **heat of fusion**

lateral control
UF *lateralization*
roll control
GS attitude control
. **lateral control**
RT ailerons
aircraft control
attitude control
automatic control
∞ control
directional control
elevons
helicopter control
longitudinal control
manual control
missile control
roll
satellite attitude control
satellite control

lateral oscillation
UF *snaking*
RT directional stability
roll
stability augmentation
transverse oscillation
turning flight
wing rock
yaw
yawing moments

lateral stability
UF *dihedral effect*
laterality
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . attitude stability
. . . . **lateral stability**
• stability
. dynamic stability
. . motion stability
. . . attitude stability
. . . . **lateral stability**
RT aerodynamic stability
aircraft stability
dihedral angle
directional stability
flow stability
handedness
hovering stability
longitudinal stability
roll
rolling moments
rotary stability
spacecraft stability
turning flight
vertical orientation

laterality
USE **lateral stability**

lateralization
USE **lateral control**

laterites
GS soils
. **laterites**
RT decomposition
rocks
tropical regions
water

latex
RT acrylic resins
elastomers
rubber
synthetic rubbers

lathes
GS tools
. machine tools
. . **lathes**
. . . turret lathes
RT ∞ construction materials
grinding machines

Latin square method
DEF In mathematics, the use of an n x n square array of n different symbols, each symbol appearing once in each row and once in each column.
RT ∞ mathematics
∞ methodology
∞ variable

latitude
DEF Angular distance from a primary great circle or plane.
GS **latitude**
. geomagnetic latitude
RT coordinates
geodetic coordinates
longitude
position (location)

latitude measurement
RT longitude measurement
∞ measurement
navigation
positioning

lattice imperfections
USE **crystal defects**

lattice parameters
GS independent variables
. **lattice parameters**
RT crystal lattices
crystallography
Patterson map
superlattices

x ray analysis

lattice vibrations
GS vibration
. **lattice vibrations**
RT crystal defects
crystal lattices
forbidden bands
particle motion
phonons
random vibration
spin–lattice relaxation
thermal energy

∞ **lattices**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT crystal lattices
lattices (mathematics)

lattices (mathematics)
UF *sublattices*
GS mathematical logic
. **lattices (mathematics)**
. . Boolean algebra
. . . Boolean functions
RT communication theory
Kakutani theorem
∞ lattices
∞ mathematics
∞ matrices
set theory
vortex lattice method

Latvia
GS nations
. **Latvia**
RT Baltic sea
Europe

Laue method
GS x ray analysis
. **Laue method**
RT crystal lattices
crystallography
diffraction
∞ methodology
x ray diffraction

laughing
RT emotions
human reactions

launch clouds
USE **exhaust clouds**

launch complexes
USE **launching bases**

launch costs
(added December 1995)
GS costs
. **launch costs**
RT cost reduction
financial management
launch vehicles
spacecraft launching

launch dates
RT launching
spacecraft launching
time
turnaround (STS)

launch escape systems
UF *LES (escape systems)*
GS escape systems
. **launch escape systems**
RT escape capsules
escape rockets
∞ systems

launch time
USE **launch windows**

launch vehicle configurations
RT Advanced Launch System (STS)
aerodynamic configurations
∞ configurations
HOTOL launch vehicle
missile configurations
propulsion system configurations
recoverable launch vehicles
spacecraft configurations

launch vehicles
UF *carrier rockets*
GS **launch vehicles**
. Ablestar launch vehicle
. Ariane launch vehicle
. . Ariane 4 launch vehicle
. . Ariane 5 launch vehicle
. Atlas launch vehicles
. . Atlas Able 5 launch vehicle
. . Atlas Agena B launch vehicle
. . Atlas Agena launch vehicles
. . Atlas Centaur launch vehicle
. . Atlas SLV-3 launch vehicle
. Blue Scout rocket vehicle
. Blue Streak launch vehicle
. Centaur launch vehicle
. . Atlas Centaur launch vehicle
. Delta launch vehicle
. Diamant launch vehicle
. Eldo launch vehicle
. Europa launch vehicles
. . Europa 1 launch vehicle
. . Europa 2 launch vehicle
. . Europa 3 launch vehicle
. . Europa 4 launch vehicle
. heavy lift launch vehicles
. . Energiya launch vehicle
. . Proton launch vehicle
. Hyta-Star rocket vehicle
. Juno launch vehicles
. . Juno 1 launch vehicle
. . Juno 2 launch vehicle
. Little Joe 2 launch vehicle
. Nomad launch vehicle
. Nova launch vehicles
. Pegasus air-launched booster
. RAM B launch vehicle
. recoverable launch vehicles
. reusable launch vehicles
. . single stage to orbit vehicles
. . . Delta Clipper
. . . HOTOL launch vehicle
. . X-33 reusable launch vehicle
. . X-34 reusable launch vehicle
. Saturn launch vehicles
. . Saturn 1 launch vehicles
. . . Saturn 1 SA-1 launch vehicle
. . . Saturn 1 SA-10 launch vehicle
. . . Saturn 1 SA-2 launch vehicle
. . . Saturn 1 SA-3 launch vehicle
. . . Saturn 1 SA-4 launch vehicle
. . . Saturn 1 SA-5 launch vehicle
. . . Saturn 1 SA-6 launch vehicle
. . . Saturn 1 SA-7 launch vehicle
. . . Saturn 1 SA-8 launch vehicle
. . . Saturn 1 SA-9 launch vehicle
. . Saturn 1B launch vehicles
. . Saturn 2 launch vehicles
. . Saturn 5 launch vehicles
. . Saturn D launch vehicle
. Scout launch vehicle
. Standard Launch Vehicles
. . Atlas SLV-3 launch vehicle
. . Standard Launch Vehicle 5
. Thor launch vehicles
. . Thor Able rocket vehicle
. . Thor Agena launch vehicle
. . Thor Delta launch vehicle
. Thorad launch vehicles
. . Thor Able rocket vehicle
. . Thor Agena launch vehicle
. . Thor Delta launch vehicle
. Titan Centaur launch vehicle
. Titan launch vehicles
. . Titan 3 launch vehicle
. . Titan 4 launch vehicle
. vanguard 2 launch vehicle
. Vega launch vehicle
RT Advanced Launch System (STS)
aerospace planes
booster rocket engines
∞ booster rockets
∞ boosters
Centaur project
exhaust clouds
flight test vehicles
Jupiter C rocket vehicle
Jupiter project
landing modules
launch costs
launchers
launching
missile launchers
missiles
multiengine vehicles
multistage rocket vehicles
National Launch Vehicle Program
rocket catapults
rocket engines
rocket launchers
rocket launching
rocket vehicles
∞ rockets
Saturn project
Scout project
Space Processing Applications Rocket
∞ spacecraft
spacecraft launching
sustainer rocket engines
test vehicles
Titan project
∞ vehicles
Vernier engines
∞ winged vehicles

launch windows
DEF The postulated openings in the continuum of time or of space, through which a spacecraft or missile must be launched in order to achieve a desired encounter, rendezvous, impact or the like. Used for launch time.
UF *launch time*
GS windows (intervals)
. **launch windows**
RT launching
rocket launching
spacecraft launching

launchers
DEF Specifically, structures or devices, often incorporating tubes, a group of tubes, or a set of tracks, from which self-propelled missiles are sent forth and by means of which the missiles usually are aimed or imparted initial guidance — distinguished in this specific sense the catapult. Broadly, structures, machines, or devices, including catapults, by means of which airplanes,

rockets, or the like are directed, hurled, or sent forth. Used for launching devices.
UF *launching devices*
GS **launchers**
. aircraft launching devices
. . JATO engines
. catapults
. . rocket catapults
. gun launchers
. hypervelocity launchers
. missile launchers
. . mobile missile launchers
. rocket launchers
. . rocket catapults
RT launch vehicles
launching
launching pads
launching sites
mass drivers
National Launch Vehicle Program
rocket launching
Titan project

launching
GS **launching**
. air launching
. rocket launching
. . liftoff (launching)
. . lunar launch
. . orbital launching
. sea launching
. spacecraft launching
. . liftoff (launching)
RT countdown
exhaust clouds
launch dates
launch vehicles
launch windows
launchers
missile launchers
National Launch Vehicle Program
prelaunch tests
rocket launchers
∞ shot
starting
Titan project

launching bases
DEF Areas such as Cape Kennedy or Vandenburg Air Force Base that have several launch sites. Used for launch complexes.
UF *launch complexes*
GS **launching bases**
. Cape Kennedy launch complex
RT ∞ facilities
ground support equipment

launching devices
USE **launchers**

launching pads
DEF The load-bearing base or platform from which a rocket vehicle is launched.
GS sites
. launching sites
. . **launching pads**
RT flame deflectors
gantry cranes
ground support equipment
launchers
liftoff (launching)
∞ pad
∞ platforms
spacecraft launching
umbilical towers

launching sites
DEF Defined areas from which a rocket vehicle is launched, either, operationally or for test purposes; specifically, at Cape Kennedy or Vandenberg, any of the several areas equipped to launch a rocket.
GS sites
. **launching sites**
. . launching pads
RT exhaust clouds
gantry cranes
ground support equipment
launchers
missile launchers
missile silos
missiles
National Launch Vehicle Program
rocket catapults
rocket launchers

lava
DEF A general term for a molten extrusive; also, for the rock that is solidified from it.
GS effusives
. **lava**
geophysical fluids
. **lava**
RT aggregates
caldera
cones (volcanoes)
Earth resources
igneous rocks
magma
maria
Mars volcanoes
minerals
regolith
rhyolite
rocks
soils
volcanoes
volcanology

Laval number
GS dimensionless numbers
. **Laval number**
ratios
. **Laval number**

∞ **law**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT claiming
law (jurisprudence)
laws

law (jurisprudence)
UF *forensic sciences*
statutes
GS **law (jurisprudence)**
. international law
. . air law
. . sea law
. . space law
. public law
. . liabilities
. . . legal liability
. . penalties
RT constitution
crime
intellectual property
∞ law
politics
regulations
voting

lawrencium
GS chemical elements
. actinide series
. . transuranium elements
. . . **lawrencium**
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . **lawrencium**
metals
. actinide series
. . transuranium elements
. . . **lawrencium**

laws
GS **laws**
. Child–Langmuir law
. closure law
. Coffin–Manson law
. conservation laws
. Fourier law
. Hookes law
. Kepler laws
. Newton pressure law
. Newton second law
. Newton–Busemann law
. Ohms law
. radiation laws
. . Kirchhoff law of radiation
. . Stefan–Boltzmann law
. . Stokes law of radiation
. scaling laws
. similitude law
. Snells law
. Tafel law
. Weber–Fechner law
RT ∞ law
rules
∞ Stokes law

lay-up
DEF Production of reinforced plastics by positioning the reinforced material (such as glass) in the mold prior to impregnation with resin.
RT aramid fibers
carbon fiber reinforced plastics
composite materials
composite structures
epoxy resins
fiber orientation
laminates
reinforcing fibers
stacking sequence (composite materials)

∞ **layers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *lamina*
plies
RT anticlines
atmospheric boundary layer
barrier layers
boundary layers
coatings
deep scattering layers
Earth ionosphere
Ekman layer
flat layers
folds (geology)
formations
geosynclines
intercalation
interlayers
laminates
membranes

mixing layers (fluids)
monomolecular films
multilayer insulation
plasma layers
ply orientation
regions
sedimentary rocks
shear layers
shock layers
strata
stratification
substrates
surface layers
synclines
three dimensional boundary layer
turbulent boundary layer

layouts
RT blueprints
circuit diagrams
construction
descriptive geometry
∞ design
∞ drawing
drawings
engineering drawings
models
∞ plans
surveys

Lazarev meteorite
GS celestial bodies
. meteorites
. . iron meteorites
. . . **Lazarev meteorite**
RT stony meteorites

LC circuits
GS circuits
. **LC circuits**
RT inductance
network analysis
network synthesis
parametric amplifiers
RC circuits
RL circuits
RLC circuits
time constant

LCRE Reactor
USE **Lithium Cooled Reactor Experiment**

LDEF
USE **Long Duration Exposure Facility**

LDR (telescope)
USE **Large Deployable Reflector**

leaching
RT autoclaving
beneficiation
dissolving
elution
extraction
flushing
hydrometallurgy
percolation
permeability
∞ separation

lead (metal)
GS chemical elements
. **lead (metal)**
. . lead isotopes
metals
. **lead (metal)**
. . lead isotopes

lead acetates
GS acetates
. **lead acetates**
esters
. **lead acetates**
lead compounds
. **lead acetates**
organic compounds
. lead organic compounds
. . **lead acetates**

lead acid batteries
DEF The common automobile batteries in which the electrodes are grids of metallic lead containing lead oxides that change in composition during charging and discharging. The electrolyte generally is dilute sulfuric acid.
GS electrochemical cells
. electric batteries
. . storage batteries
. . . **lead acid batteries**
RT chemical auxiliary power units
∞ electric cells
electrolytic cells
energy storage
nickel iron batteries
∞ power supplies

lead alloys
GS alloys
. **lead alloys**
RT bearing alloys
indium alloys
solders

lead chlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . **lead chlorides**
. halides
. . chlorides
. . . **lead chlorides**
. . metal halides
. . . **lead chlorides**
lead compounds
. **lead chlorides**

lead compounds
UF *plumbane*
GS **lead compounds**
. lead acetates
. lead chlorides
. lead molybdates
. lead oxides
. lead selenides
. lead sulfides
. lead tellurides
. lead titanates
. . lead zirconate titanates
. lead tungstates
RT ∞ chemical compounds
Group 4A compounds
∞ metal compounds

lead isotopes
GS chemical elements
. lead (metal)
. . **lead isotopes**
. nuclides
. . isotopes
. . . **lead isotopes**
metals
. lead (metal)
. . **lead isotopes**

lead molybdates
GS lead compounds
. **lead molybdates**
molybdenum compounds
. molybdates
. . **lead molybdates**

lead organic compounds
GS organic compounds
. **lead organic compounds**
. . lead acetates
RT ∞ chemical compounds
∞ metal compounds

lead oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **lead oxides**
lead compounds
. **lead oxides**

lead poisoning
GS diseases
. toxic diseases
. . **lead poisoning**
toxicity
. **lead poisoning**
RT occupational diseases
∞ poisoning
smog

lead selenides
GS chalcogenides
. selenides
. . **lead selenides**
lead compounds
. **lead selenides**
selenium compounds
. selenides
. . **lead selenides**

lead sulfides
GS chalcogenides
. sulfides
. . inorganic sulfides
. . . **lead sulfides**
lead compounds
. **lead sulfides**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **lead sulfides**

lead tellurides
GS chalcogenides
. tellurides
. . **lead tellurides**
lead compounds
. **lead tellurides**
tellurium compounds
. tellurides
. . **lead tellurides**

lead titanates
GS lead compounds
. **lead titanates**
. . lead zirconate titanates
titanium compounds
. titanates
. . **lead titanates**
. . . lead zirconate titanates

lead tungstates
GS lead compounds
. **lead tungstates**
tungsten compounds

. tungstates
. . lead tungstates

lead zirconate titanates
DEF Dense ceramics with high piezoelectric coefficients and a high relative permittivity.
GS ceramics
. **lead zirconate titanates**
lead compounds
. **lead titanates**
. . **lead zirconate titanates**
titanium compounds
. titanates
. . lead titanates
. . . **lead zirconate titanates**
. zirconium titanates
. . . **lead zirconate titanates**
zirconium compounds
. zirconium titanates
. . **lead zirconate titanates**
RT ferroelectric materials
piezoelectric ceramics

leadership
RT morale
personnel management

leading edge flaps
DEF Control surfaces at the leading edges of airfoils. Hinged panels deflected downward to induce and control separation of the air flow.
UF *Kruger flaps*
GS airfoils
. flaps (control surfaces)
. . wing flaps
. . . **leading edge flaps**
brakes (for arresting motion)
. aerodynamic brakes
. . wing flaps
. . . **leading edge flaps**
. aircraft brakes
. . wing flaps
. . . **leading edge flaps**
control surfaces
. flaps (control surfaces)
. . wing flaps
. . . **leading edge flaps**
drag devices
. aerodynamic brakes
. . wing flaps
. . . **leading edge flaps**
RT aircraft structures
vortex flaps
∞ winged vehicles
wings

leading edge slats
UF *wing slats*
GS airfoils
. flaps (control surfaces)
. . wing flaps
. . . **leading edge slats**
brakes (for arresting motion)
. aerodynamic brakes
. . wing flaps
. . . **leading edge slats**
. aircraft brakes
. . wing flaps
. . . **leading edge slats**
control surfaces
. flaps (control surfaces)
. . wing flaps
. . . **leading edge slats**
drag devices
. aerodynamic brakes
. . wing flaps
. . . **leading edge slats**
RT boundary layer control
split flaps
spoilers
trailing edge flaps
wing slots

leading edge sweep
GS geometry
. Euclidean geometry
. . angles (geometry)
. . . sweep angle
. . . . sweepback
. . . . . **leading edge sweep**

leading edge thrust
DEF The increase in lift produced by highly swept, low-aspect ratio wings which develop a strong separation vortex; however, an even larger increase in drag is produced.
GS thrust
. **leading edge thrust**
RT aerodynamic forces
airfoils
leading edges
lift
wing loading

leading edges
GS edges
. **leading edges**
. . blunt leading edges
. . sharp leading edges
RT airfoils
forebodies
leading edge thrust
thrust distribution
trailing edges
vortex flaps
wing rock

leaf area index
GS ratios
. indexes (ratios)
. . vegetative index
. . . **leaf area index**
RT canopies (vegetation)
crop identification
crop inventories
leaves
remote sensing
spectral reflectance

leakage
RT brush seals
cavities
cracks
defects
∞ escape
fluid flow
intrusion
labyrinth seals
loss of coolant
losses
permeability
pinholes
porosity
∞ reduction
seepage
wastes

Lear jet aircraft
GS commercial aircraft
. **Lear jet aircraft**
jet aircraft
. **Lear jet aircraft**
RT ∞ aircraft

learning
GS learning
. astronaut training
. conditioning (learning)
. habituation (learning)
. maze learning
. transfer of training
RT achievement
aptitude
behavior
child development
deconditioning
education
educational television
habits
instructors
knowledge
memory
motivation
reinforcement (psychology)
responses
retention (psychology)
students
teaching machines
textbooks
training analysis
training evaluation
universities

learning curves
RT asymptotic methods
∞ curves

learning machines
USE **machine learning**

learning theory
RT child development
education
problem solving
∞ theories

leasing
DEF Contracting for the use and possession of land, buildings, etc., for a specified time and fixed payments.
GS procurement
. **leasing**
RT contracts
land use
NASA programs
resources management
site selection

least squares method
DEF Any statistical procedure that involves minimizing the sum of squared differences.
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **least squares method**
RT correlation
curve fitting
Gauss-Markov theorem
mean square values
∞ methodology
optimization
parameter identification
quality control
regression analysis
simultaneous equations

leather
RT clothing
collagens
shoes
skin (anatomy)

leaves
RT brown wave effect
canopies (vegetation)
deciduous trees
defoliants
defoliation
foliage
green wave effect
herbicides
leaf area index
plants (botany)

Lebanon
GS nations
. . **Lebanon**
RT Asia

Lebesgue theorem
GS analysis (mathematics)
. real variables
. . measure and integration
. . . **Lebesgue theorem**
theorems
. **Lebesgue theorem**
RT set theory

lectures
UF speeches
RT education
public speaking
speech
verbal communication

LED (diodes)
USE **light emitting diodes**

Leda
(added January 1986)
DEF A natural satellite of Jupiter orbiting at a mean distance of 11,094,000 kilometers.
GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . **Leda**
RT Jupiter (planet)

ledges
RT cliffs
rocks
topography

lee waves
DEF Internal waves occurring on the downstream side of submarine ridges.
RT air currents
barotropic flow
surface waves
tropospheric waves
vertical air currents

leg (anatomy)
GS anatomy
. limbs (anatomy)
. . **leg (anatomy)**
. . . feet (anatomy)
. . . knee (anatomy)
. . . thigh
appendages
. **leg (anatomy)**
. . feet (anatomy)
. . . knee (anatomy)
. . . thigh
RT femur
tibia

legal liability
GS law (jurisprudence)
. public law
. . liabilities
. . . **legal liability**
RT air law
contracts
insurance (contracts)
intellectual property
international law
judgments
losses
penalties
prohibition

Legendre code
USE **computer programming**
neutron scattering

Legendre functions
UF *Legendre polynomials*
Legendre transformation
GS analysis (mathematics)
. complex variables
. . **Legendre functions**
functions (mathematics)
. **Legendre functions**
RT orthogonal functions
spherical harmonics

Legendre polynomials
USE **Legendre functions**

Legendre transformation
USE **Legendre functions**

legibility
RT character recognition
contrast
perception
printing
reading
resolution
symbols
visibility
vision

leguminous plants
GS farm crops
. **leguminous plants**
. . soybeans
plants (botany)
. **leguminous plants**
. . soybeans
RT agriculture
botany
Earth resources
∞ food
hay
nitrogenation
nodules
vegetables

Leidenfrost phenomenon
GS phase transformations
. vaporizing
. . boiling
. . . nucleate boiling
. . . . **Leidenfrost phenomenon**
RT film boiling
heat transfer

LEM (lunar module)
USE **Lunar Module**

lemmas
USE **theorems**

length
DEF The larger of the two dimensions of the open face.
GS dimensions
. **length**
. . diffusion length
RT distance
thickness

Lennard–Jones gas
RT binary fluids
gas viscosity
Lennard–Jones potential

Lennard–Jones potential
RT computerized simulation
intermolecular forces
Lennard–Jones gas
molecular interactions
potential theory

lens antennas
GS antennas
. directional antennas
. . **lens antennas**
. radio antennas
. . microwave antennas
. . . **lens antennas**
microwave equipment
. microwave antennas
. . **lens antennas**
radio equipment
. radio antennas
. . microwave antennas
. . . **lens antennas**
RT antenna design
dipole antennas
horn antennas
lenses
multibeam antennas
radar antennas
waveguide antennas
wire grid lenses

lens design
RT antireflection coatings
aspheric optics
computer aided design
∞ design
gradient index optics
lenses
optical correction procedure
∞ optics
product development
stigmatism
zoom lenses

lenses
DEF Transparent optical elements, so constructed that they serve to change the degree of convergence of the transmitted rays.
GS **lenses**
. aspheric optics
. contact lenses
. Fresnel lenses
. gravitational lenses
. magnetic lenses
. wide angle lenses
. wire grid lenses
. zoom lenses
RT **astigmatism**
cameras
cataracts
circumscribed telescopes
eye (anatomy)
eyepieces
focusing
gradient index optics
integrated optics
lens antennas
lens design
magnification
numerical aperture

optical equipment
optical fibers
optical materials
∞ optics
panoramic cameras
photographic equipment
refracting telescopes
refraction
reticles
stigmatism
streak cameras
telescopes
vignetting

lenticular bodies
GS symmetrical bodies
. **lenticular bodies**
RT axisymmetric bodies
∞ bodies
convexity

LEO
USE **low earth orbits**

LEO environments
USE **Earth orbital environments**

Leonid meteoroids
GS celestial bodies
. meteoroid showers
. . **Leonid meteoroids**
. meteoroids
. . **Leonid meteoroids**

leptons
DEF In the classification of subatomic particles according to mass, the lightest of all particles; examples of leptons are the electron and positron.
GS particles
. elementary particles
. . fermions
. . . **leptons**
. . . . antineutrinos
. . . . electrons
. . . . . conduction electrons
. . . . . free electrons
. . . . . high energy electrons
. . . . . relativistic electron beams
. . . . . hot electrons
. . . . . N electrons
. . . . . negatrons
. . . . . photoelectrons
. . . . . pi-electrons
. . . . . polarons
. . . . . solar electrons
. . . . muons
. . . . neutrinos
. . . . . solar neutrinos
. . . . positrons
RT charged particles
charm (particle physics)
gluons
mesons
partons
quantum chromodynamics
quark parton model

LES (escape systems)
USE **launch escape systems**

LES (mathematics)
USE **large eddy simulation**

LES (satellites)
USE **Lincoln Experimental Satellites**

LESA (lunar exploration system)
USE **Lunar Exploration System for Apollo**

lesions
GS injuries
. **lesions**
. . pulmonary lesions
RT abrasion
burns (injuries)

Lesotho
GS nations
. **Lesotho**
RT Africa
Republic of South Africa

Lesser Antilles
GS landforms
. islands
. . West Indies
. . . **Lesser Antilles**
RT Atlantic Ocean

lethality
RT carbon monoxide poisoning
damage
destruction

lethargy
RT boredom
∞ depression
detachment
frustration
human behavior
∞ inhibition
monotony

letters (symbols)
USE **symbols**

leucine
GS acids
. amino acids
. . **leucine**
. . . norleucine
organic compounds
. amino acids
. . **leucine**
. . . norleucine

leukemias
GS diseases
. tumors
. . neoplasms
. . . cancer
. . . . **leukemias**
RT bone marrow
occupational diseases

leukocytes
UF *white blood cells*
GS cells (biology)
. blood cells
. . **leukocytes**
. . . **eosinophils**
. . . lymphocytes
RT biocompatibility
bone marrow
erythrocytes
immune systems

leukopenia
GS signs and symptoms
. **leukopenia**
RT infectious diseases

∞ **level**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT chemical energy
free energy
height
internal energy
level (horizontal)
level (quantity)

level (horizontal)
GS **level (horizontal)**
. liquid levels
RT ∞ grade
gradients
∞ level
slopes

level (quantity)
GS **level (quantity)**
. effective perceived noise levels
. energy levels
. . atomic energy levels
. . electron states
. . ground state
. . molecular energy levels
. . . intermolecular forces
. . . rotational states
. . . vibrational states
RT amplitudes
displacement
∞ flux
flux (rate)
flux density
∞ intensity
∞ level
loudness
magnitude
value

leveling
SN (EXCLUDES METAL WORKING)
RT adjusting
consistency
datum (elevation)
flattening
metal working
∞ rolling
smoothing
winding

levers
RT cantilever members
handles
knobs
∞ machinery
manual control
mechanical devices
pedals

levitation
GS **levitation**
. acoustic levitation
RT buoyancy
electrostatic gyroscopes
flotation
frictionless environments
levitation melting
magnetic bearings
magnetic levitation vehicles
suspension systems (vehicles)
vacuum melting

levitation melting
DEF A metallurgical process in which a piece of metal placed above a coil carrying a high frequency current can be supported against gravity by the Lorentz force caused by the induced surface currents in the metal. At the same time, the heat produced by Joule dissipation melts the metal.
GS phase transformations
. melting

. . . **levitation melting**
RT electric current
external surface currents
levitation
liquid metals
low gravity manufacturing
magnetic suspension
∞ metallurgy
ohmic dissipation
resistance heating
space manufacturing
space processing

Lewis base
RT amines
electrons

Lewis numbers
GS dimensionless numbers
. **Lewis numbers**
ratios
. **Lewis numbers**
RT density (mass/volume)
diffusion coefficient
fluid flow
heat transfer
mass flow
mass transfer
specific heat
thermal conductivity

Lexan (trademark)
GS carbon compounds
. carbonates
. . polycarbonates
. . . **Lexan (trademark)**
esters
. polycarbonates
. . **Lexan (trademark)**
RT ∞ polymers
resins

LFO
USE **Landsat follow-on missions**

liabilities
GS law (jurisprudence)
. public law
. . **liabilities**
. . . legal liability
RT air law
commerce
disciplining
losses
penalties
regulations

Liapunov functions
UF *Lyapunov functions*
GS analysis (mathematics)
. real variables
. . **Liapunov functions**
functions (mathematics)
. **Liapunov functions**
RT differential equations

Liberia
GS nations
. **Liberia**
RT Africa

libraries
RT bibliographies
catalogs (publications)
data retrieval
documentation
documents
information dissemination
information resources management
information retrieval
information systems
integrated library systems
interservice data exchange program
literature
museums
∞ reference systems
selective dissemination of information
textbooks
world data centers

libration
DEF A real or apparent oscillatory motion, particularly the apparent oscillation of the moon. Because of libration more than half of the moon's surface is revealed to an observer on the Earth even though the same side of the moon is always toward the Earth, because the moon's periods of rotation and revolution are the same. Other motions regarded as librations are long period orbital motions and periodic perturbations in orbital elements.
RT Earth limb
Lissajous figures
lunar far side
lunar limb
∞ motion
nutation
orbital resonances (celestial mechanics)
precession
rotation

librational motion
RT Lagrange coordinates
∞ motion
nutation
orbital resonances (celestial mechanics)

Libya
UF *Lybia*
GS nations
. **Libya**
RT Africa

Libyan desert
GS land
. deserts
. . **Libyan desert**
RT Africa

licensing
RT copyrights
intellectual property
patent applications
policies
regulations

lichens
GS plants (botany)
. **lichens**
RT algae
fungi
lacunas
symbiosis

lidar
USE **optical radar**

lie groups
GS algebra
. **lie groups**
. . spinor groups
geometry
. differential geometry
. . **lie groups**
. . . spinor groups
RT group theory
supergravity
supersymmetry

Liechtenstein
GS nations
. **Liechtenstein**
RT Europe

Lienard potential
GS potential energy
. electric potential
. . **Lienard potential**
RT electric current
electric fields

lies
RT galvanic skin response
mental performance

LIF (fluorescence)
USE **laser induced fluorescence**

life (biology)
USE **life sciences**

life (durability)
UF *lifetime (durability)*
GS **life (durability)**
. carrier lifetime
. fatigue life
. half life
. plasma lifetime
. satellite lifetime
. service life
. storage stability
RT accelerated life tests
aircraft survivability
depletion
depreciation
durability
failure analysis
long term effects
∞ longevity
Mills ratio
MTBF
∞ resistance
retirement for cause
systems health monitoring
vulnerability

life cycle costs
DEF The sum of the acquisition costs and maintenance costs for the life of a system.
GS costs
. **life cycle costs**
RT concurrent engineering
cost analysis
cost effectiveness
design to cost
financial management
management planning
production costs
systems engineering
value engineering

life detectors
RT biosatellites
∞ detectors
extraterrestrial life

life rafts
GS rafts
. **life rafts**
RT floats
inflatable structures
lifeboats

life sciences
DEF The field of scientific disciplines encompassing biology, physiology, psychology, medicine, sociology, and other related areas. Used for life (biology).
UF *life (biology)*
GS **life sciences**
. . extraterrestrial life
. . molecular biology
RT **abiogenesis**
aging (biology)
biological evolution
∞ biology
chemical evolution
environmental engineering
neurology
∞ physical sciences
psychopharmacology
∞ science

life span
SN (LIMITED TO THE LIFE SCIENCES)
RT **age factor**
aging (biology)
death
existence
gerontology
∞ longevity
mortality
∞ span

life support systems
GS support systems
. . **life support systems**
. . . biopaks
. . . closed ecological systems
. . . emergency life sustaining systems
. . . . AEPS
. . . portable life support systems
. . . . AEPS
. . . . IMLSS
RT **aerospace environments**
air conditioning
artificial gravity
astronaut locomotion
∞ atmospheres
biosatellites
breathing apparatus
Chlorella
environmental engineering
environments
exobiology
extravehicular mobility units
human factors engineering
long term effects
lunar environment
lunar logistics
lunar shelters
manned maneuvering units
∞ nutrients
onboard equipment
oxygen masks
oxygen supply equipment
planetary environments
pressure suits
pressurized cabins
provisioning
rebreathing
space flight feeding
space habitats
spacecraft environments
survival
∞ sustaining
∞ systems
thermal environments
underwater breathing apparatus
vapor barrier clothing
ventilation
waste management
water
weightlessness

lifeboats
GS surface vehicles
. . boats
. . . **lifeboats**
water vehicles
. . boats
. . . **lifeboats**
RT **Assured Crew Return Vehicle**
life rafts
rafts
survival equipment
X-38 crew return vehicle

lifetime (durability)
USE **life (durability)**

lift
DEF That component of the total aerodynamic force acting on a body perpendicular to the undisturbed airflow relative to the body. To lift off, to take off in vertical ascent. Said of rocket vehicles. Used for aerodynamic lift, lift coefficients, lift distribution, lift forces, and variable lift.
UF *aerodynamic lift*
lift coefficients
lift distribution
lift forces
variable lift
GS aerodynamic characteristics
. . **lift**
. . . interference lift
. . . jet lift
. . . rotor lift
. . . zero lift
aerodynamic forces
. . **lift**
. . . interference lift
. . . jet lift
. . . rotor lift
. . . zero lift
dynamic characteristics
. . **lift**
. . . interference lift
. . . jet lift
. . . rotor lift
. . . zero lift
RT **aerodynamic coefficients**
aerodynamic configurations
aerodynamic drag
aerodynamics
airfoils
angle of attack
aspect ratio
camber
distribution (property)
drag
externally blown flaps
gliding
ground effect (aerodynamics)
hypersonic forces
leading edge thrust
pressure distribution
sweep effect
under surface blowing
upper surface blowing

lift augmentation
RT boundary layer control
circulation control airfoils
downwash
peripheral jet flow
spanwise blowing
STOVL aircraft
tangential blowing
upper surface blown flaps
vortex flaps

lift coefficients
USE **aerodynamic coefficients**
lift

lift devices
UF *lifting surfaces*
RT boundary layer control
∞ devices
direct lift controls
drag devices
externally blown flaps
flaps (control surfaces)
magnetic levitation vehicles
slots
upper surface blown flaps

lift distribution
USE **force distribution**
lift

lift drag ratio
DEF The ratio of lift to drag obtained by dividing the lift by the drag or the lift coefficient by the drag coefficient. Used for drag balance.
UF *drag balance*
GS ratios
. . **lift drag ratio**
RT **aerodynamic balance**
aerodynamic coefficients
aerodynamic drag
aerodynamic stalling
boundary layer separation
drag reduction
force distribution
pressure ratio

lift fans
UF *fanlift devices*
RT ducted fans
fan in wing aircraft
lifting rotors
propeller fans
rotary wings
short takeoff aircraft
turbofans
vertical takeoff aircraft
XV-11A aircraft

lift forces
USE **lift**

lifting bodies
UF *lifting surfaces*
GS **lifting bodies**
. . lifting reentry vehicles
. . . FDL-5 reentry vehicle
. . . HL-10 reentry vehicle
. . . HLD-35 reentry vehicle
. . . Janus spacecraft
. . . M-2 lifting body
. . . . M-2F2 lifting body
. . . X-20 aircraft
. . . X-24 aircraft
. . M-2F3 lifting body
RT **aerodynamic configurations**
airfoils
bluff bodies
∞ bodies
∞ devices
lunar flying vehicles
reentry vehicles
towed bodies
waveriders

lifting reentry vehicles
UF *reentry gliders*
space gliders
GS lifting bodies
. **lifting reentry vehicles**
. . FDL-5 reentry vehicle
. . HL-10 reentry vehicle
. . HLD-35 reentry vehicle
. . Janus spacecraft
. . M-2 lifting body
. . . M-2F2 lifting body
. . X-20 aircraft
. . X-24 aircraft
reentry vehicles
. maneuverable reentry bodies
. . **lifting reentry vehicles**
. . . FDL-5 reentry vehicle
. . . HL-10 reentry vehicle
. . . HLD-35 reentry vehicle
. . . Janus spacecraft
. . . M-2 lifting body
. . . . M-2F2 lifting body
. . . X-20 aircraft
. . . X-24 aircraft
RT aerospace planes
∞ aircraft
ASSET gliders
Astro vehicle
boostglide vehicles
gliders
HOPE aerospace plane
hypersonic gliders
manned reentry
manned spacecraft
recoverable spacecraft
reentry
spacecraft reentry

lifting rotors
GS airfoils
. wings
. . rotary wings
. . . **lifting rotors**
. . . . **bearingless** rotors
rotating bodies
. rotors
. . rotary wings
. . . **lifting rotors**
. . . . **bearingless** rotors
RT ground **effect** machines
lift fans
rotary wing aircraft
short takeoff aircraft
vertical takeoff aircraft

lifting surfaces
USE **lift devices**
lifting bodies
surfaces

liftoff (launching)
GS launching
. rocket launching
. . **liftoff (launching)**
. spacecraft launching
. . **liftoff (launching)**
RT booster rocket engines
countdown
launching pads
rocket firing
rocket thrust

∞ **lifts**
SN USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW
RT conveyors
cranes
elevators (lifts)
escalators
jacks (lifts)
winches

ligaments
RT connective tissue
joints (anatomy)

ligands
RT chemical bonds
chemical composition

light (visible radiation)
DEF Visible radiation (about 0.4 to 0.7 microns in wavelength) considered in terms of its luminous efficiency, i.e., evaluated in proportion to its ability to stimulate the sense of sight. Used for optical spectrum and visible radiation.
UF *optical spectrum*
visible radiation
GS electromagnetic radiation
. **light (visible radiation)**
. . coherent light
. . gegenschein
. . polarized light
. . sky radiation
. . . airglow
. . . . geocoronal emissions
. . . . nightglow
. . . . twilight glow
. . . dayglow
. . sunlight
. . zodiacal light
RT atmospheric radiation
attenuation
beams (radiation)
black body radiation
brightness
Cerenkov radiation
coherent electromagnetic radiation
coherent radiation
color
critical frequencies
darkness
dichroism
electromagnetic spectra
energy absorption
exciters
extraterrestrial radiation
∞ flash
geometrical optics
glare
illuminance
incandescence
infrared radiation
light curve
lighting equipment
line spectra
lumens
luminaires
luminance
luminescence
luminosity
luminous intensity
monochromatic radiation
near infrared radiation
near ultraviolet radiation
opacity
optical depolarization
optical emission spectroscopy
optical measurement
optical properties
∞ optics
photics
photometry
photons
photonuclear reactions
photophilic plants
photophoresis
photosensitivity
planetary radiation
polarized electromagnetic radiation
polarizers
∞ radiation
Raman spectra
reflection
refraction
refractivity
shadows
sky brightness
solar radiation
thermal radiation
transmittance
ultraviolet spectra
visibility
visible spectrum

light absorption
USE **electromagnetic absorption**

light adaptation
GS adaptation
. retinal adaptation
. . **light adaptation**
sensitivity
. photosensitivity
. . **light adaptation**
RT **flash** blindness
night vision
pupillometry
thresholds (perception)
vision

Light Airborne Multipurpose System
UF *LAMPS program*
GS navigation aids
. **Light Airborne Multipurpose System**
onboard equipment
. airborne equipment
. . **Light Airborne Multipurpose System**
RT aircraft equipment
flight instruments
navigation instruments
∞ systems

light aircraft
GS **light aircraft**
. Beech 99 aircraft
. . Beechcraft 18 aircraft
. . C-33 aircraft
. . C-35 aircraft
. Cessna 172 aircraft
. Cessna 205 aircraft
. Cessna 210 aircraft
. Cessna 402B aircraft
. Cessna L-19 aircraft
. DH 125 aircraft
. DO-27 aircraft
. DO-28 aircraft
. F-28 helicopter
. Firebee 2 target drone aircraft
. G-1 aircraft
. light helicopters
. . OH-4 helicopter
. . OH-5 helicopter
. . OH-6 helicopter
. . OH-58 helicopter
. light intratheater transport
. MH-262 aircraft
. Mystere 20 aircraft
. OH-13 helicopter

. OH-23 helicopter
. PD-808 aircraft
. Piper aircraft
. . PA-34 Seneca aircraft
. Saab 105 aircraft
. SC-7 aircraft
. U-10 aircraft
. VZ-8 aircraft
RT agricultural aircraft
∞ aircraft
biplanes
drone aircraft
general aviation aircraft
∞ low wing aircraft
∞ military aircraft
observation aircraft
passenger aircraft
pilotless aircraft
reconnaissance aircraft
submersible aircraft
∞ subsonic aircraft
training aircraft
transport aircraft
ultralight aircraft
utility aircraft
water takeoff and landing aircraft

light alloys
GS alloys
. **light alloys**
. . aluminum alloys
. . . aluminum–lithium alloys
. . beryllium alloys
. . magnesium alloys
RT ∞ metallurgy
metals

light amplifiers
UF *optical amplifiers*
GS amplifiers
. **light amplifiers**
RT fiber lasers
four-wave mixing
HCN lasers
image converters
image enhancement
image intensifiers
Lallemand cameras
laser cavities
laser microscopy
lasers
microchannels
∞ optics
photocathodes
quantum amplifiers
ultrashort pulsed lasers
ultraviolet lasers

light armed reconnaissance aircraft
USE **COIN aircraft**

light beams
UF *light probes*
GS beams (radiation)
. **light beams**
. . laser beams
electromagnetic radiation
. **light beams**
. . laser beams
RT Bragg cells
four-wave mixing
optical waveguides
photon beams
rare gas–halide lasers

light bulbs
USE **luminaires**

light communication
USE **optical communication**

light curve
RT ∞ curves
light (visible radiation)
stellar radiation

light duration
USE **flash**
pulse duration

light elements
GS chemical elements
. **light elements**
RT ∞ elements
low density materials

light emission
UF *optical emission*
GS emission
. **light emission**
. . incandescence
. . luminescence
. . . bioluminescence
. . . cathode glow
. . . cathodoluminescence
. . . chemiluminescence
. . . electroluminescence
. . . fluorescence
. . . . laser induced fluorescence
. . . . phosphorescence
. . . . resonance fluorescence
. . . . x ray fluorescence
. . . lunar luminescence
. . . optical resonance
. . . photoluminescence
. . . . triboluminescence
. . . . x ray fluorescence
. . . shock wave luminescence
. . . sonoluminescence
. . . spacecraft glow
. . . thermoluminescence
RT airglow
auroral absorption
auroral ionization
auroral spectroscopy
auroras
diffraction radiation
dimming
electromagnetic radiation
linear polarization
∞ optics
self sustained emission
sky brightness
spectral emission
stimulated emission
white holes (astronomy)

light emitting diodes
DEF Pn junction semiconductor devices that emit incoherent optical radiation when biased in the forward direction. Used for LED (diodes).
UF *LED (diodes)*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **light emitting diodes**
. solid state devices
. . semiconductor devices
. . . **light emitting diodes**
optoelectronic devices
. **light emitting diodes**
RT aircraft instruments
alphanumeric characters
display devices
electroluminescence
luminescence
photonics
surface emitting lasers

light gas guns
GS gas guns
. **light gas guns**
RT hypervelocity projectiles

light helicopters
(added June 1989)
GS light aircraft
. **light helicopters**
. . OH-4 helicopter
. . OH-5 helicopter
. . OH-6 helicopter
. . OH-58 helicopter
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **light helicopters**
. . . . OH-4 helicopter
. . . . OH-5 helicopter
. . . . OH-6 helicopter
. . . . OH-58 helicopter
RT ∞ aircraft
military helicopters
observation aircraft

light intensity
USE **luminous intensity**

light intratheater transport
GS light aircraft
. **light intratheater transport**
transport aircraft
. **light intratheater transport**
RT ∞ aircraft
COIN aircraft

light ions
DEF Ions of helium, boron, and other elements used in implantation experiments.
GS ions
. **light ions**
RT chemical elements
heavy ions
plasmas (physics)

light modulation
UF *optical maser modulation*
optical modulation
GS modulation
. **light modulation**
. . Miros system
. . ultrasonic light modulation
RT amplitude modulation
Bragg cells
electro-optical effect
frequency modulation
Kerr electrooptical effect
lasers
light modulators
light valves
modulators
optical heterodyning
optical resonators
optical switching
∞ optics
polarization modulation
pulse modulation
traveling wave modulation
tunable lasers

light modulators
(added September 1995)
GS modulators
. **light modulators**
RT acousto-optics

electro-optics
light modulation
magneto-optics
optical data processing

light pressure
USE **illuminance**

light probes
USE **light beams**

light scattering
GS scattering
. wave scattering
.. electromagnetic scattering
... **light scattering**
.... halos
transmission
. electromagnetic wave transmission
.. light transmission
... **light scattering**
.... halos
. wave propagation
.. **light scattering**
... halos
RT afterglows
atmospheric scattering
bidirectional reflectance
Brillouin effect
circumsolar radiation
diffuse radiation
electromagnetic absorption
forward scattering
gravitational lenses
infrared absorption
Rayleigh scattering
reflection nebulae
scatter plates (optics)
speckle patterns
transmissivity
tropospheric scattering
Umkehr effect

light scattering meters
GS measuring instruments
. optical measuring instruments
.. **light scattering meters**
optical equipment
. optical measuring instruments
.. **light scattering meters**
RT meteorological instruments

light sources
GS **light sources**
. illuminators
RT arc lamps
cathodoluminescence
dayglow
duochromators
electric arcs
electroluminescence
flash lamps
glow discharges
HCN lasers
heat sources
illuminating
lasers
lighting equipment
luminaires
mercury lamps
monochromators
moon
plasma display devices
point sources
porous silicon
radiation sources
sun

light speed
GS rates (per time)
. **light speed**
velocity
. **light speed**
RT high speed
relativistic velocity
Schwarzschild metric

light transmission
UF *optical absorption*
GS transmission
. electromagnetic wave transmission
.. **light transmission**
... light scattering
.... halos
RT absorptance
atmospheric optics
atmospheric refraction
Fermat principle
fiber optics
flicker
gamma ray lasers
geometrical optics
haze
holographic optical elements
illuminating
∞ illumination
integrated optics
lasers
low visibility
molecular absorption
opacity
optical bistability
optical coupling
optical properties
optical reflection
optical waveguides
rainbows
Sagnac effect
squeezed states (quantum theory)
stimulated emission devices
translucence
transparence
turbidity
ultraviolet lasers
visibility
wave dispersion
wave propagation

light transport aircraft
DEF A classification of multiengine airplanes having a maximum passenger capacity of 30 seats and a gross weight of about 35,000 pounds.
GS commercial aircraft
. **light transport aircraft**
transport aircraft
. **light transport aircraft**
RT∞ aircraft
multiengine vehicles
passenger aircraft

light valves
DEF Optical shutters which, when activated by light, become either transparent or opaque.
RT electro-optics
light modulation
liquid crystals
optical data processing

light water
DEF Water in which both hydrogen atoms in each molecule are of the isotope protium. Used for protium.
UF *protium*
GS hydrogen compounds
. **light water**
water
. **light water**

light water breeder reactors
GS nuclear reactors
. breeder reactors
.. **light water breeder reactors**
RT heavy water reactors

light water reactors
DEF Nuclear reactors using ordinary (rather than heavy) water as moderator.
GS nuclear reactors
. liquid cooled reactors
.. water cooled reactors
... **light water reactors**
RT water moderated reactors

light-cone expansion
RT field theory (physics)
Minkowski space
quantum mechanics
relativity
space-time functions

Lighthill gas model
GS models
. **Lighthill gas model**
RT boundary layer flow
gas mixtures
gas transport
hypersonic flow
molecular theory
transport properties

Lighthill method
RT airfoil profiles
airfoils
conformal mapping
flow theory
integral transformations
∞ methodology

lighting
USE **illuminating**

lighting equipment
GS **lighting equipment**
. illuminators
. luminaires
.. aircraft lights
.. airport lights
... runway lights
.. arc lamps
.. flash lamps
... alkali vapor lamps
.. mercury lamps
.. quartz lamps
.. searchlights
.. xenon lamps
RT∞ electric equipment
∞ equipment
∞ flares
illuminating
light (visible radiation)
light sources
onboard equipment
waste energy utilization

lightning
DEF A discharge of atmospheric electricity accompanied by a vivid flash of light.
GS electric current
. electric discharges
.. **lightning**
... ball lightning
RT∞ arresters
atmospheric electricity
electric arcs

electric sparks
electricity
electrodeless discharges
gas discharges
lightning suppression
nitrogenation
radiative recombination
static electricity
thunderstorms
whistlers

lightning suppression
GS weather modification
. **lightning suppression**
RT atmospheric electricity
climatology
electric discharges
lightning
thunderstorms

lights
USE **luminaires**

lignin
DEF That part of plant material which is not saccharified by the action of 72 percent sulfuric acid or 42 percent hydrochloric acid, after the resins, waxes, and tannins have been removed.
RT cellulose
∞ polymers

lignite
DEF Coal of relatively recent origin, an intermediate between peat and bituminous coal.
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . fossil fuels
. . . . coal
. . . . . **lignite**
resources
. Earth resources
. . fossil fuels
. . . coal
. . . . **lignite**
rocks
. sedimentary rocks
. . carbonaceous rocks
. . . coal
. . . . **lignite**
RT ashes
bitumens
carbonaceous materials
coal gasification
coal liquefaction
coal utilization
coke
energy conversion
energy policy
energy technology
gaseous fuels
hydrocarbon fuel production
hydrogen production
hydropyrolysis
synthane

likelihood ratio
DEF The probability of a random drawing of a specified sample from a population, assuring a given hypothesis about the parameters of the population, divided by the probability of a random drawing of the same sample, assuring that the parameters of the population are such that this probability is maximized.
GS ratios
. **likelihood ratio**
statistical analysis
. **likelihood ratio**
RT estimates
mathematical models
maximum likelihood estimates
probability theory
statistical tests

limb brightening
DEF The increase in the intensity of radio or x ray brightness of the sun or other stars from its center to its limb.
RT B stars
brightness
brightness temperature
∞ limbs
solar flux
solar flux density
solar granulation
solar limb
stellar atmospheres
stellar luminosity

limb darkening
DEF A condition, sometimes observed on celestial bodies, in which the brightness of the object decreases as the edges or limbs of the object are approached. The sun and Jupiter exhibit limb darkening.
GS darkening
. **limb darkening**
RT B stars
binary stars
∞ limbs
solar limb
stellar atmospheres
stellar luminosity

∞ **limbs**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Earth limb
limb brightening
limb darkening
limbs (anatomy)
lunar limb
planetary limb
solar limb

limbs (anatomy)
GS anatomy
. **limbs (anatomy)**
. . arm (anatomy)
. . . elbow (anatomy)
. . . forearm
. . hand (anatomy)
. . . fingers
. . leg (anatomy)
. . . feet (anatomy)
. . . knee (anatomy)
. . . thigh
RT appendages
human body
∞ limbs

lime
USE **calcium oxides**

limen
DEF Threshold; a psychophysical concept denoting the lowest detectable intensity of any sensory stimulus.
RT psychological tests
thresholds (perception)

limestone
DEF Sedimentary rock composed principally of calcium carbonate (the mineral calcite) or the double carbonate of calcium and magnesium (the mineral dolomite) or mixture of the two.
GS rocks
. sedimentary rocks
. . **limestone**
RT aggregates
calcium carbonates
dolomite (mineral)
Earth resources
fluxes
minerals
schist
soils

limitations
USE **constraints**

limiter amplifiers
GS amplifiers
. **limiter amplifiers**

limiter circuits
GS circuits
. **limiter circuits**
. . clipper circuits
RT circulators (phase shift circuits)
clamping circuits
current regulators
power limiters

limiters (fusion reactors)
DEF Material aperture in fusion power reactors which collect particles from the outer surfaces of the plasmas to control their transport to regions of low density.
RT blankets (fusion reactors)
controlled fusion
divertors (fusion reactors)
fusion reactors
moderation (energy absorption)
moderators
plasma control
plasma loss
reactor design
reactor materials
tokamak devices
toroidal plasmas
walls

∞ **limits**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ignition limits
limits (mathematics)
range (extremes)

limits (mathematics)
GS analysis (mathematics)
. calculus
. . **limits (mathematics)**
. real variables
. . extremum values
. . . **limits (mathematics)**
RT differential calculus
∞ envelopes
∞ limits

limnology
DEF The physical, chemical, meteorological, and especially the biological and ecological conditions in inland waters.
RT aquifers
arroyos
Earth hydrosphere
fresh water
geochemistry
geophysics

ground water
∞ hydraulics
hydrography
hydrology
Lake Texoma (OK–TX)
lakes
marine biology
marine chemistry
ponds
potable water
rain
streams
water
water management
water pollution
water resources
wells

limonite
GS iron compounds
. **limonite**
minerals
. **limonite**

Lincoln Experimental Satellites
UF *LES (satellites)*
GS artificial satellites
. **Lincoln Experimental Satellites**

line current
GS electric current
. **line current**
RT electric power supplies
electrodynamics
magnetohydrodynamic flow
plasma currents
∞ power supplies

line of sight
DEF An aim or observation taken with mechanical or optical aid to establish a direct path to an objective, target, etc.
RT area
coordinates
∞ direction
loci
targets

line of sight communication
DEF Electromagnetic wave propagation, usually microwaves, in a straight line between the transmitter and receiver. The useful transmission distance is generally limited to the horizon as sighted from the elevation of the transmitter.
GS telecommunication
. communication
. . **line of sight communication**
RT boresight error
frequency modulation
space communication
television transmission

line shape
GS shapes
. **line shape**
RT curves (geometry)
inflection points
∞ profiles

line spectra
DEF The spontaneous emission of electromagnetic radiation from the bound electrons as they jump from high to low energy levels in an atom. Used for spectral lines.
UF *spectral lines*
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . **line spectra**
. . . . Balmer series
. . . . D lines
. . . . electronic spectra
. . . . Fraunhofer lines
. . . . H lines
. . . . . H alpha line
. . . . . H beta line
. . . . . H gamma line
. . . . K lines
. . . . Lyman spectra
. . . . Paschen series
. . . . Rydberg series
. . . . telluric lines
RT absorption spectra
atomic energy levels
Bohr theory
emission spectra
fine structure
flame spectroscopy
frequencies
hyperfine structure
infrared spectra
light (visible radiation)
∞ lines
molecular spectroscopy
oscillator strengths
pressure broadening
Raman spectra
Raman spectroscopy
resonance lines
rotational spectra
Seyfert galaxies
solar spectra
spectral bands
spectral emission
spectral energy distribution
spectral line width
spectral resolution
spectrograms
spectrum analysis
Stark effect
stellar spectra
ultraviolet spectra
visible spectrum

lineament
USE **structural properties (geology)**

linear AC alternators
USE **linear alternators**

linear accelerators
DEF Devices for accelerating charged particles employing alternate electrodes and gaps arranged in a straight line, so proportioned that when their potentials are varied in the proper amplitudes and frequency, particles passing through them receive successive increments of energy.
GS particle accelerators
. **linear accelerators**
RT ∞ accelerators
electron accelerators
ion sources
multipactor discharges
neutron sources

linear alternators
(added July 1991)
DEF An electromagnetic energy converter that converts reciprocating linear harmonic motion and driving force input to AC electrical power and energy output.
UF *linear AC alternators*
GS electric generators
. AC generators
. . **linear alternators**
RT free–piston engines
∞ generators
Stirling engines

linear amplifiers
GS amplifiers
. **linear amplifiers**

linear arrays
DEF Antenna arrays whose elements are equally spaced along a straight line.
GS arrays
. antenna arrays
. . **linear arrays**
. . . endfire arrays
. . . . Yagi antennas
. . . multispectral linear arrays
RT dipole antennas
focal plane devices
laser arrays
multiple beam interval scanners
phased arrays
pushbroom sensor modes

linear circuits
GS circuits
. **linear circuits**
RT amplifiers
distributed parameter systems
electrical resistance
superposition (mathematics)
transconductance
volt–ampere characteristics

linear energy transfer (LET)
GS energy transfer
. **linear energy transfer (LET)**
RT ionizing radiation

linear equations
GS algebra
. **linear equations**
. . linear evolution equations
. . Riccati equation
analysis (mathematics)
. real variables
. . **linear equations**
. . . linear evolution equations
. . . Riccati equation
RT determinants
differential equations
∞ equations
Floquet theorem
Gaussian elimination
linear operators
matrices (mathematics)
operational calculus
polynomials

linear evolution equations
DEF Denotes a large class of differential or integral differential equations which are used to describe the evolution in time of some physical systems from an initial state. The equation is said to be linear if the unknown functions and their derivatives appear linearly.
GS algebra
. linear equations
. . **linear evolution equations**
analysis (mathematics)
. real variables
. . linear equations
. . . **linear evolution equations**
RT difference equations
∞ equations

linear filters
GS **linear filters**
. **Kalman filters**
. reduced order filters
RT **adaptive filters**
electric filters
electromagnetic wave filters
∞ **filters**
frequency response
nonlinear filters

linear integrated circuits
GS circuits
. integrated circuits
. . **linear integrated circuits**
RT electronic packaging
large scale integration
microminiaturization
molecular electronics
operational amplifiers
transistor circuits

linear operators
GS operators (mathematics)
. **linear operators**
RT linear equations
linear systems
linear transformations

linear polarization
DEF Polarization of an electromagnetic wave in which the electric vector at a fixed point in space remains pointing in a fixed direction although varying in magnitude. Also known as plane polarization.
GS polarization (waves)
. **linear polarization**
RT light emission
microwave emission
optical polarization
∞ polarization
polarized electromagnetic radiation
polarized radiation
radio astronomy

linear prediction
GS predictions
. **linear prediction**
RT computation
differential pulse code modulation
mathematical models
operations research
quality control
statistical analysis

linear programming
DEF An optimization problem characterization in which a set of parameter values are to be determined, subject to given linear constraints.
GS optimization
. mathematical programming
. . **linear programming**
research
. **linear programming**
RT ∞ applications of mathematics
computer programming
constraints
dynamic programming
formalism
game theory
matrices (mathematics)
nonlinear programming
numerical analysis
operations research
∞ programming
simplex method

linear quadratic Gaussian control
DEF A type of optimal–state feedback control whose design considers noise. It is primarily used to control aircraft and spacecraft systems. Used for LQG control.
UF *LQG control*
GS automatic control
. optimal control
. . **linear quadratic Gaussian control**
optimization
. linear quadratic regulator
. . **linear quadratic Gaussian control**
. optimal control
. . **linear quadratic Gaussian control**
RT ∞ control
control systems design
control theory
feedback control
H–infinity control
Kalman filters

linear quadratic regulator
DEF A type of optimal–state feedback controller that does not consider noise. It is primarily used to control aircraft and spacecraft. Used for linear regulator and LQR.
UF *linear regulator*
LQR
GS optimization
. **linear quadratic regulator**
. . linear quadratic Gaussian control
RT ∞ control
control systems design
control theory
controllers
feedback control
Kalman filters
optimal control

linear receivers
GS receivers
. **linear receivers**
RT frequency response
Nyquist frequencies

linear regulator
USE **linear quadratic regulator**

linear systems
RT distributed parameter systems
linear operators
nonlinear systems
robustness (mathematics)
state estimation
∞ systems
tracking problem

linear transformations
GS algebra
. **linear transformations**
functions (mathematics)
. **linear transformations**
transformations (mathematics)
. **linear transformations**
RT Fourier analysis
Jordan form
linear operators
matrices (mathematics)
orthogonal functions
Schwartz inequality
vector spaces

linear vibration
GS vibration
. structural vibration
. . **linear vibration**
RT free vibration
missile vibration
random vibration
vibration mode

linearity
DEF The maximum deviation between an actual instrument reading and the reading predicted by a straight line drawn between upper and lower calibration points; usually expressed as a percentage of the full scale.
GS **linearity**
. collinearity
RT accuracy
consistency
differential equations
dynamic characteristics
errors
functions (mathematics)
instrument errors
linearization
nonlinearity
tolerances (mechanics)
variability

linearization
RT Bernoulli theorem
∞ equations
Galerkin method
linearity
simplification

linen
GS fabrics
. **linen**
fibers
. **linen**
textiles
. **linen**
RT organic materials

liners
USE **linings**

∞ **lines**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT delay lines
line spectra
lines of force
pipelines
terminator lines
tetherlines
transmission lines
underground transmission lines

lines (geometry)
GS geometry
. Euclidean geometry
. . **lines (geometry)**
. . . chords (geometry)
. . . geodesic lines
RT radii
reciprocal theorems
segments

lines of force
RT barium ion clouds
conjugate points
field aligned currents
flux pinning
flux transfer events
∞ force
∞ lines
magnetic circuits
magnetic domains
magnetic fields
magnetic flux
magnetic mirrors
magnetic properties

magnetostatic fields
nonuniform magnetic fields
polar cusps

Ling–Temco–Vought aircraft
UF *LTV aircraft*
GS **Ling–Temco–Vought aircraft**
. A–7 aircraft
. F–8 aircraft
. XC–142 aircraft
RT ∞ aircraft

linguistics
GS **linguistics**
. machine translation
. phonemics
. phonetics
. psycholinguistics
. semantics
. syntax
RT languages
natural language processing
orthography
phonemes
predicate logic
speech
speech recognition

lining processes
RT coating
coatings
insulation
linings
sealing
tunneling (excavation)

linings
UF *liners*
GS **linings**
. rocket linings
RT bushings
∞ casing
coatings
inserts
insulation
jackets
lining processes
sheaths
shielding
∞ tubes

linkages
RT cams
connectors
coupling
couplings
eccentrics
fasteners
fittings
joints (junctions)
latches
∞ links
mechanical devices
unions (connectors)
yokes

linking
USE **joining**

∞ **links**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT chains
data links
linkages
links (mathematics)

links (mathematics)
GS geometry
. topology
. . **links (mathematics)**
RT ∞ links

Liouville equations
GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **Liouville equations**
RT ∞ equations
plasma physics
plasmas (physics)
statistical mechanics

Liouville theorem
GS analysis (mathematics)
. complex variables
. . **Liouville theorem**
theorems
. **Liouville theorem**

lip reading
GS communicating
. **lip reading**
reading
. **lip reading**

lipid metabolism
GS metabolism
. protein metabolism
. . **lipid metabolism**
RT ∞ nutrients
oils

lipids
GS organic compounds
. **lipids**
. . calciferol
. . castor oil
. . fats
. . lipoproteins
. . phylloquinone
. . retinene
. . steroids
. . . cholesterol
. . . corticosteroids
. . . . aldosterone
. . . . hydroxycorticosteroid
. . . . . cortisone
. . . estrogens
. . . prostaglandins
. . tocopherol
RT amino acids
esters
glycerols
myelin
∞ nutrients

lipoic acid
GS acids
. carboxylic acids
. . fatty acids
. . . **lipoic acid**
organic compounds
. carboxylic acids
. . fatty acids
. . . **lipoic acid**

lipoproteins
GS biopolymers
. proteins
. . **lipoproteins**
organic compounds
. lipids
. . **lipoproteins**
. proteins
. . **lipoproteins**

lips (anatomy)
GS anatomy
. digestive system
. . mouth
. . . **lips (anatomy)**
. face (anatomy)
. . mouth
. . . **lips (anatomy)**
RT head (anatomy)

Lipschitz condition
GS analysis (mathematics)
. real variables
. . **Lipschitz condition**
conditions
. **Lipschitz condition**
RT differential equations

liquefaction
GS phase transformations
. **liquefaction**
. . coal liquefaction
RT ∞ condensation
∞ conversion
jet condensers
melting
noncondensable gases
thixotropy

liquefied gases
GS **gases**
. **liquefied gases**
. . liquefied natural gas
. . liquid air
. . liquid ammonia
. . liquid fluorine
. . liquid helium
. . . liquid helium 2
. . liquid hydrogen
. . liquid neon
. . liquid nitrogen
. . liquid oxygen
liquids
. **liquefied gases**
. . liquefied natural gas
. . liquid air
. . liquid ammonia
. . liquid fluorine
. . liquid helium
. . . liquid helium 2
. . liquid hydrogen
. . liquid neon
. . liquid nitrogen
. . liquid oxygen
RT condensates
condensers (liquefiers)
cryogenic rocket propellants
cryogenics
gas mixtures
liquid rocket propellants
solid cryogen cooling

liquefied natural gas
UF *LNG*
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . fossil fuels
. . . . natural gas
. . . . . **liquefied natural gas**
. gaseous fuels
. . natural gas
. . . **liquefied natural gas**
gases
. flammable gases

. . gaseous fuels
. . . natural gas
. . . . liquefied natural gas
. . liquefied natural gas
. liquefied gases
. . liquefied natural gas
geophysical fluids
. natural gas
. . liquefied natural gas
liquids
. liquefied gases
. . liquefied natural gas
organic compounds
. hydrocarbons
. . natural gas
. . . liquefied natural gas
resources
. Earth resources
. . fossil fuels
. . . natural gas
. . . . liquefied natural gas
RT methane

liquid air
GS gases
. gas mixtures
. . air
. . . liquid air
. liquefied gases
. . liquid air
liquids
. liquefied gases
. . liquid air
mixtures
. solutions
. . gas mixtures
. . . air
. . . . liquid air

liquid air cycle engines
UF *LACE (engine)*
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . liquid air cycle engines
RT aerospace planes
hydrogen oxygen engines
sustainer rocket engines
turborocket engines

liquid alloys
GS alloys
. liquid alloys
RT metals

liquid ammonia
GS gases
. ammonia
. . liquid ammonia
. liquefied gases
. . liquid ammonia
inorganic compounds
. ammonia
. . liquid ammonia
liquids
. liquefied gases
. . liquid ammonia
nitrogen compounds
. ammonia
. . liquid ammonia
RT fuels
liquid fuels

liquid atomization
GS atomizing
. liquid atomization
RT gas atomization
spraying

liquid bearings
GS bearings
. liquid bearings
RT lubrication

liquid breathing
GS respiration
. liquid breathing
RT acclimatization
pressure breathing
resuscitation

liquid bridges
(added September 1993)
DEF Axisymmetric liquid columns held by capillary forces and forming an interface between two solids or between two gaps in a solid. Useful in space processing.
RT∞ bridges
capillary flow
containerless melts
interfacial tension
liquid–solid interfaces
low gravity manufacturing
Marangoni convection
space manufacturing
space processing

liquid chromatography
UF *gel permeation chromatography*
GS chemical tests
. chemical analysis
. . chromatography
. . . liquid chromatography
RT colorimetry
paper chromatography
sorption

liquid cooled reactors
GS nuclear reactors
. liquid cooled reactors
. . liquid metal cooled reactors
. . . advanced sodium cooled reactor
. . . Experimental Breeder Reactor 1
. . . Experimental Breeder Reactor 2
. . . Lithium Cooled Reactor Experiment
. . . Los Alamos Molten Plutonium Reactor
. . . military compact reactors
. . . sodium graphite reactors
. . . sodium reactor experiment
. . organic cooled reactors
. . . experimental organic cooled reactors
. . water cooled reactors
. . . boiling water reactors
. . . . experimental boiling water reactors
. . . . Halden Boiling Water Reactor
. . . . Los Alamos Water Boiler Reactor
. . . . Pathfinder nuclear reactor
. . . . Spert reactors
. . . heavy water reactors
. . . . heavy water components test reactors
. . . . plutonium recycle test reactor
. . . . zero power reactor 2
. . . light water reactors
. . . NRX reactors
. . . Plum Brook Reactor
. . . pressurized water reactors
. . . . spectral shift control reactor
. . . swimming pool reactors
. . . zero power reactors
. . . . zero power reactor 2
. . . . zero power reactor 3
. . . . zero power reactor 6
. . . . zero power reactor 9
RT sodium cooling

liquid cooling
SN (COOLING WITH LIQUIDS)
UF *water cooling*
GS cooling
. liquid cooling
. . film cooling
RT air cooling
coolants
cooling systems
sodium cooling
space cooling (buildings)
sweat cooling
thermal pollution
water immersion

liquid crystals
GS crystals
. liquid crystals
RT anisotropic fluids
cholesterol
ferroelectric materials
light valves

liquid drops
USE **drops (liquids)**

liquid filled shells
GS shells (structural forms)
. fluid filled shells
. . liquid filled shells
RT hydrodynamic ram effect
propellant tanks
reinforced shells
shell stability
∞ storage
tanks (containers)
∞ vessels

liquid flow
GS fluid flow
. liquid flow
. . open channel flow
. . water flow
RT critical flow
gas flow
head (fluid mechanics)
head flow
hydrodynamic coefficients
laminar flow
mass flow
multiphase flow
nonNewtonian flow
orifice flow
pipe flow
pressure gradients
pressure heads
rheology
single–phase flow
Soret coefficient
steady flow
subcritical flow
supercritical flow
turbulent flow
two phase flow
uniform flow
unsteady flow

liquid fluorine
GS chemical elements
. halogens
. . fluorine
. . . liquid fluorine
gases
. liquefied gases

. . **liquid fluorine**
liquids
. liquefied gases
. . **liquid fluorine**

liquid fuels
GS **fuels**
. chemical fuels
. . **liquid fuels**
. . . aircraft fuels
. . . antimisting fuels
. . . automobile fuels
. . . diesel fuels
. . . gasoline
. . . hydrogen fuels
. . . jet engine fuels
. . . . JP-4 jet fuel
. . . . JP-5 jet fuel
. . . . JP-6 jet fuel
. . . . JP-7 jet fuel
. . . . JP-8 jet fuel
. . . kerosene
RT fuel production
gaseous fuels
liquid ammonia
liquid hydrogen
liquid rocket propellants
liquids
synthetic fuels

liquid helium
UF *helium 2*
GS chemical elements
. rare gases
. . helium
. . . **liquid helium**
. . . . liquid helium 2
gases
. liquefied gases
. . **liquid helium**
. . . liquid helium 2
. rare gases
. . helium
. . . **liquid helium**
. . . . liquid helium 2
liquids
. cryogenic fluids
. . **liquid helium**
. . . liquid helium 2
. liquefied gases
. . **liquid helium**
. . . liquid helium 2
RT cryostats
superfluidity
two fluid models

liquid helium 2
GS chemical elements
. rare gases
. . helium
. . . liquid helium
. . . . **liquid helium 2**
gases
. liquefied gases
. . liquid helium
. . . **liquid helium 2**
. rare gases
. . helium
. . . liquid helium
. . . . **liquid helium 2**
liquids
. cryogenic fluids
. . liquid helium
. . . **liquid helium 2**
. liquefied gases
. . liquid helium
. . . **liquid helium 2**
RT cryostats
superfluidity

liquid hydrogen
GS chemical elements
. hydrogen
. . **liquid hydrogen**
gases
. hydrogen
. . **liquid hydrogen**
. liquefied gases
. . **liquid hydrogen**
liquids
. cryogenic fluids
. . **liquid hydrogen**
. liquefied gases
. . **liquid hydrogen**
RT cryogenic rocket propellants
fuels
hydrogen fuels
hydrogen-based energy
liquid fuels
slush hydrogen
topping cycle engines

liquid injection
GS injection
. fluid injection
. . **liquid injection**
. . . deep well injection (wastes)
. . . water injection
RT film cooling
fuel injection
fuel sprays
mixing
propellant sprays
thrust vector control

liquid lasers
GS stimulated emission devices
. lasers
. . **liquid lasers**
RT carbon lasers
chemical lasers
dye lasers
infrared lasers
organic lasers

liquid levels
GS level (horizontal)
. **liquid levels**
RT fluid boundaries

liquid lithium
GS chemical elements
. alkali metals
. . lithium
. . . **liquid lithium**
liquids
. liquid metals
. . **liquid lithium**
metals
. alkali metals
. . lithium
. . . **liquid lithium**
. liquid metals
. . **liquid lithium**

liquid mercury
USE **mercury (metal)**

liquid metal cooled reactors
UF *LMCR (reactors)*
GS nuclear reactors
. liquid cooled reactors
. . **liquid metal cooled reactors**
. . . advanced sodium cooled reactor
. . . Experimental Breeder Reactor 1
. . . Experimental Breeder Reactor 2
. . . Lithium Cooled Reactor Experiment
. . . Los Alamos Molten Plutonium Reactor
. . . military compact reactors
. . . sodium graphite reactors
. . . sodium reactor experiment
RT Enrico Fermi atomic power plant
sodium

liquid metal fast breeder reactors
UF *LMFBR*
GS nuclear reactors
. breeder reactors
. . **liquid metal fast breeder reactors**
. fast nuclear reactors
. . **liquid metal fast breeder reactors**
RT nuclear power reactors

liquid metals
GS liquids
. **liquid metals**
. . liquid lithium
. . liquid potassium
. . liquid sodium
. . mercury (metal)
. . . mercury isotopes
. . . mercury vapor
metals
. **liquid metals**
. . liquid lithium
. . liquid potassium
. . liquid sodium
. . mercury (metal)
. . . mercury isotopes
. . . mercury vapor
RT casting
levitation melting
lubricants
melting
metal vapors
squeeze casting

liquid neon
GS chemical elements
. rare gases
. . neon
. . . **liquid neon**
gases
. liquefied gases
. . **liquid neon**
. rare gases
. . neon
. . . **liquid neon**
liquids
. liquefied gases
. . **liquid neon**

liquid nitrogen
GS chemical elements
. nitrogen
. . **liquid nitrogen**
gases
. liquefied gases
. . **liquid nitrogen**
. nitrogen
. . **liquid nitrogen**
liquids
. cryogenic fluids
. . **liquid nitrogen**
. liquefied gases
. . **liquid nitrogen**
RT high temperature superconductors
solid cryogens

liquid oxidizers
GS liquids
. **liquid oxidizers**
oxidizers
. **liquid oxidizers**
RT rocket oxidizers

liquid oxygen
UF *LOX (oxygen)*
GS chemical elements
. oxygen
. . **liquid oxygen**
gases
. liquefied gases
. . **liquid oxygen**
. oxygen
. . **liquid oxygen**
liquids
. cryogenic fluids
. . **liquid oxygen**
. liquefied gases
. . **liquid oxygen**
oxidizers
. **liquid oxygen**
RT cryogenic rocket propellants
FLOX
oxygen–hydrocarbon rocket engines
rocket oxidizers

liquid oxygen hydrocarbon rocket engines
USE **oxygen–hydrocarbon rocket engines**

liquid phase epitaxy
DEF A liquid phase transformation during crystal growth.
GS growth
. crystal growth
. . epitaxy
. . . **liquid phase epitaxy**
RT crystal structure
liquid phases
vapor phase epitaxy

liquid phase sintering
(added August 1991)
DEF Sintering of a compact, or loose powder aggregate under conditions where a liquid phase is present during part of the sintering cycle.
GS sintering
. **liquid phase sintering**
RT consolidation
metal powder
powder metallurgy

liquid phases
RT alloys
critical pressure
electroepitaxy
eutectics
liquid phase epitaxy
liquids
liquidus
melting points
phase diagrams
phase separation (materials)
∞ phases
solid phases
solid solutions
solidus
solubility
supercritical pressures
syntectic alloys
transition temperature
vapor phase epitaxy
vapor phases

liquid plus solid zones
USE **mushy zones**

liquid potassium
GS chemical elements
. alkali metals
. . potassium
. . . **liquid potassium**
liquids
. liquid metals
. . **liquid potassium**
metals
. alkali metals
. . potassium
. . . **liquid potassium**
. liquid metals
. . **liquid potassium**

liquid propellant rocket engines
DEF Rocket engines using a propellant or propellants in liquid form.
GS **engines**
. rocket engines
. . **liquid propellant rocket engines**
. . . AJ-10 engine
. . . F-1 rocket engine
. . . H-1 engine
. . . hydrazine engines
. . . hydrogen oxygen engines
. . . . J-2 engine
. . . . M-1 engine
. . . . RL-10-A-1 engine
. . . . RL-10-A-3 engine
. . . liquid air cycle engines
. . . LR-62-RM-2 engine
. . . LR-87-AJ-5 engine
. . . LR-91-AJ-5 engine
. . . MA-2 engine
. . . MA-3 engine
. . . MA-5 engine
. . . oxygen–hydrocarbon rocket engines
. . . RL-10 engines
. . . . RL-10-A-1 engine
. . . . RL-10-A-3 engine
. . . Space Shuttle Main Engine
. . . X-405 engine
. . . XLR-99 engine
. . . YLR-91-AJ-1 engine
RT Ablestar launch vehicle
Atlas SLV-3 launch vehicle
Black Knight rocket vehicle
Blue Steel missile
Blue Streak launch vehicle
Blue Streak missile
BOMARC A missile
BOMARC B missile
booster rocket engines
Centaur launch vehicle
Corporal missile
Corvus missile
Delta Clipper
Diamant launch vehicle
Dornier paraglider rocket vehicle
ducted rocket engines
hybrid propellant rocket engines
∞ hybrid rocket engines
Hyta-Star rocket vehicle
internal combustion engines
Juno 1 launch vehicle
Juno 2 launch vehicle
Juno launch vehicles
Jupiter C rocket vehicle
Jupiter missile
Lance missile
Meteor 1 rocket vehicle
Navaho missile
Nike-Ajax missile
Nomad launch vehicle
Nova launch vehicles
propellant tanks
restartable rocket engines
retrorocket engines
Saturn S-1 stage
Saturn S-1B stage
Saturn S-1C stage
Saturn S-2 stage
Saturn S-4 stage
Saturn S-4B stage
Saturn stages
solid propellant rocket engines
Sparrow 3 missile
sustainer rocket engines
Talos missile
Thor Able rocket vehicle
Thor Agena launch vehicle
Thor Delta launch vehicle
Thor launch vehicles
Thorad launch vehicles
Titan ICBM
Titan launch vehicles
V-1 missile
V-2 missile
vanguard 2 launch vehicle
Vega launch vehicle
Vernier engines
Veronique rocket vehicles
Viking rocket vehicle
X-33 reusable launch vehicle
X-34 reusable launch vehicle

liquid rocket propellants
DEF Specifically, rocket propellants in liquid form. Examples of liquid propellants include fuels such as alcohol, gasoline, aniline, liquid ammonia, and liquid hydrogen; oxidants such as liquid oxygen, hydrogen peroxide (also applicable as a monopropellant), and nitric acid; additives such as water; and monopropellants such as nitromethane. Used for bipropellants and tripropellants.
UF *bipropellants*
tripropellants
GS propellants
. rocket propellants
. . **liquid rocket propellants**
. . . cryogenic rocket propellants
. . . gelled rocket propellants
. . . hypergolic rocket propellants
. . . monopropellants
. . . . aerozine
. . . RP-1 rocket propellants
. . . slurry propellants
. . . . slush hydrogen
RT aircraft fuels
chemical compatibility
chlorine fluorides
fuel tank pressurization
gaseous rocket propellants
high energy propellants
hybrid propellants
hydrazines
hydrogen fuels
liquefied gases
liquid fuels
liquids
nitrogen tetroxide
propellant sprays
solid rocket propellants
storable propellants

liquid rotation
USE **rotating liquids**

liquid sloshing
DEF The back and forth movement of a liquid fuel in its tank, creating problems of stability and control in the vehicle. Used for sloshing.
UF *sloshing*
RT aerodynamic stability
aircraft stability
baffles
controllability
fuel control
fuel tanks
interface stability
propellant tanks
propellant transfer
rotating fluids
spacecraft stability
storage stability
tank geometry
ullage

liquid sodium
GS chemical elements
. alkali metals
. . sodium
. . . **liquid sodium**
liquids
. liquid metals
. . **liquid sodium**
metals
. alkali metals
. . sodium
. . . **liquid sodium**
. liquid metals
. . **liquid sodium**

liquid surfaces
GS **liquid surfaces**
. menisci
RT fluid boundaries
free boundaries
interfacial tension
jet boundaries
solid surfaces
surface waves
∞ surfaces

liquid wastes
DEF The liquid counterpart of solid wastes from industrial, chemical, metabolic, and/or mineral sources.
GS wastes
. **liquid wastes**
. . urine
. . waste water
RT drainage
effluents
human wastes
industrial wastes
metabolic wastes
ponds
sewage
sludge
solid wastes

liquid–gas mixtures
GS mixtures
. dispersions
. . **liquid–gas mixtures**
. . . aerosols
. . . . fog
RT air water interactions
binary mixtures
gas mixtures
menisci
solubility
vapor phases
vapor pressure

liquid–liquid interfaces
GS boundaries
. fluid boundaries
. . **liquid–liquid interfaces**
interfaces
. fluid boundaries
. . **liquid–liquid interfaces**
RT boundary layers
free boundaries
heat transfer
interface stability
interfacial energy
interfacial tension
pressure gradients
solubility

liquid–solid interfaces
GS boundaries
. fluid boundaries
. . **liquid–solid interfaces**
interfaces
. fluid boundaries
. . **liquid–solid interfaces**
RT boundary layers
fluid films
fluid–solid interactions
∞ fusion
heat transfer
interface stability
liquid bridges
melting
menisci
metal surfaces
phase change materials
solid phases
solid–solid interfaces
squeeze films

liquid–vapor equilibrium
UF *vapor liquid equilibrium*
RT ∞ equilibrium
thermodynamic equilibrium
vapors

liquid–vapor interfaces
GS boundaries
. fluid boundaries
. . **liquid–vapor interfaces**
interfaces
. fluid boundaries
. . **liquid–vapor interfaces**
RT air water interactions
evaporation
free boundaries
heat transfer
interface stability
menisci
pressure gradients
solubility
vapor phases
vapor pressure

liquids
DEF Substances in a state in which the individual particles move freely with relation to each other and take the shape of the container, but do not expand to fill the container.
GS **liquids**
. cryogenic fluids
. . Fermi liquids
. . FLOX
. . liquid helium
. . . liquid helium 2
. . liquid hydrogen
. . liquid nitrogen
. . liquid oxygen
. ferrofluids
. hydraulic fluids
. . Skydrol (trademark)
. juices
. liquefied gases
. . liquefied natural gas
. . liquid air
. . liquid ammonia
. . liquid fluorine
. . liquid helium
. . . liquid helium 2
. . liquid hydrogen
. . liquid neon
. . liquid nitrogen
. . liquid oxygen
. liquid metals
. . liquid lithium
. . liquid potassium
. . liquid sodium
. . mercury (metal)
. . . mercury isotopes
. . . mercury vapor
. liquid oxidizers
. organic liquids
. potable liquids
. . beverages
. . . wines
. . potable water
. rotating liquids
RT ∞ fluids
globules
glycerols
liquid fuels
liquid phases
liquid rocket propellants
nonpoint sources
phase diagrams
vapor phases
water

liquidus
RT crystallization
liquid phases
melting points
phase diagrams
solid phases
solid solutions
solidus

LIRTS (telescope)
DEF A proposed large infrared telescope for Spacelab superseded by the German infrared laboratory. Used for Large Infrared Telescope on Spacelab.
UF *Large Infrared Telescope on Spacelab*
GS telescopes
. spaceborne telescopes
. . **LIRTS (telescope)**
RT European Space Agency
payloads
space shuttles
Spacelab

LISP (programming language)
GS languages
. programming languages
. . **LISP (programming language)**
RT computer programming
recursive functions

Lissajous figures
DEF Figures where the path of a particle moving in a plane when the components of its position along two perpendicular axes each

undergo simple harmonic motions and the ratio of their frequencies is a rational number.
RT eccentric orbits
equations of motion
libration
lunar orbits
satellite orbits

lists
GS **lists**
. **hardware utilization lists**
RT ∞ catalogs
display devices
enumeration
indexes (documentation)
printouts

literature
GS **literature**
. biography
. documentation
RT bibliographies
documents
indexes (documentation)
knowledge
libraries
papers
philosophy

lithergol rocket engines
GS **engines**
. **rocket engines**
. . hybrid propellant rocket engines
. . . **lithergol rocket engines**
RT ∞ hybrid rocket engines

lithergolic propellants
USE **hybrid propellants**

lithiasis
GS **diseases**
. **lithiasis**
RT calculi
dental calculi

lithium
GS chemical elements
. **alkali metals**
. . **lithium**
. . . liquid lithium
. . . lithium isotopes
metals
. **alkali metals**
. . **lithium**
. . . liquid lithium
. . . lithium isotopes

lithium 4
USE **lithium isotopes**

lithium 6
USE **lithium isotopes**

lithium alloys
GS **alloys**
. **lithium alloys**
. . **aluminum–lithium alloys**
RT aircraft construction materials
aluminum alloys
copper alloys
magnesium alloys
zirconium alloys

lithium aluminum hydrides
GS aluminum compounds
. **lithium aluminum hydrides**
hydrogen compounds
. hydrides
. . metal hydrides
. . . lithium hydrides
. . . . **lithium aluminum hydrides**
lithium compounds
. lithium hydrides
. . **lithium aluminum hydrides**
RT powdered aluminum

lithium borates
GS boron compounds
. **borates**
. . **lithium borates**
lithium compounds
. **lithium borates**

lithium chlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . **lithium chlorides**
. halides
. . chlorides
. . . **lithium chlorides**
. . metal halides
. . . **lithium chlorides**
lithium compounds
. **lithium chlorides**

lithium compounds
GS **lithium compounds**
. lithium borates
. lithium chlorides
. lithium fluorides
. lithium hydrides
. . lithium aluminum hydrides
. lithium hydroxides
. lithium iodates
. lithium niobates
. lithium oxides
. lithium perchlorates
. lithium sulfates
. organic lithium compounds
. spodumene
RT ∞ alkali metal compounds
∞ chemical compounds
∞ metal compounds
metal fuels

Lithium Cooled Reactor Experiment
UF *LCRE Reactor*
GS nuclear reactors
. liquid cooled reactors
. . liquid metal cooled reactors
. . . **Lithium Cooled Reactor Experiment**

lithium fluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **lithium fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **lithium fluorides**
. . metal halides
. . . metal fluorides
. . . . **lithium fluorides**
lithium compounds
. **lithium fluorides**

lithium hydrides
GS hydrogen compounds
. hydrides
. . metal hydrides
. . . **lithium hydrides**
. . . . lithium aluminum hydrides
lithium compounds
. **lithium hydrides**
. . lithium aluminum hydrides

lithium hydroxides
GS **bases (chemical)**
. **alkalies**
. . **lithium hydroxides**
hydroxides
. **lithium hydroxides**
lithium compounds
. **lithium hydroxides**

lithium iodates
DEF Salts of iodic acid containing the 10 to the third power radical.
GS halogen compounds
. iodine compounds
. . iodates
. . . **lithium iodates**
lithium compounds
. **lithium iodates**
RT ∞ metal compounds

lithium isotopes
UF *lithium 4*
lithium 6
GS chemical elements
. **alkali metals**
. . **lithium**
. . . **lithium isotopes**
. nuclides
. . isotopes
. . . **lithium isotopes**
metals
. **alkali metals**
. . **lithium**
. . . **lithium isotopes**

lithium niobates
GS lithium compounds
. **lithium niobates**
niobium compounds
. niobates
. . **lithium niobates**

lithium oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **lithium oxides**
lithium compounds
. **lithium oxides**

lithium perchlorates
GS halogen compounds
. chlorine compounds
. . perchlorates
. . . **lithium perchlorates**
lithium compounds
. **lithium perchlorates**

lithium sulfates
GS lithium compounds
. **lithium sulfates**
sulfur compounds
. sulfates
. . **lithium sulfates**

lithium sulfur batteries
DEF Primary cells for producing electrical energy using lithium metal for one electrode and sulfur for the other.
GS electrochemical cells
. electric batteries

. . **lithium sulfur batteries**
RT ∞ **cells**
∞ **electric cells**
∞ **energy sources**
∞ **power supplies**

lithography
DEF The process of printing from a plane surface on which the image to be printed is ink receptive and water repellant and the non–image area is ink repellant and water receptive.
UF *stensolithography*
ultraviolet lithography
GS printing
. **lithography**
. . photolithography
RT photomechanical effect
reproduction (copying)

lithology
DEF Description of the physical character of rocks as determined by eye or with a low–power magnifier and based on color, structure, mineralogic components, and grain size.
GS geology
. **lithology**
RT regolith
rocks

lithosphere
DEF The solid portion of the Earth, as compared to atmosphere and hydrosphere.
UF *geosphere*
GS **lithosphere**
. Earth core
. Earth crust
. Earth mantle
. Earth surface
RT asthenosphere
Earth planetary structure
planetary mantles
plates (tectonics)
subduction (geology)

Lithuania
GS nations
. **Lithuania**
RT Europe

Little Joe 2 launch vehicle
GS launch vehicles
. **Little Joe 2 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . **Little Joe 2 launch vehicle**
RT Algol engine
Mercury project
sergeant missiles
solid propellant rocket engines
TX–354 engine
XM–33 engine

Little John rocket vehicle
GS rocket vehicles
. single stage rocket vehicles
. . **Little John rocket vehicle**
. surface to surface rockets
. . **Little John rocket vehicle**
RT Hercules engine
solid propellant rocket engines

littoral currents
USE **coastal currents**

littoral drift
DEF Material (such as shingle, gravel, sand, and shell fragments) that is moved along the shore by coastal currents.
RT bars (landforms)
beaches
breakwaters
coasts
ocean currents
sands
sediments

littoral transport
RT breakwaters
ocean currents
sands
water waves
∞ waves

liver
GS anatomy
. **liver**
RT gastrointestinal system
glands (anatomy)
hepatitis
tyrosine

Livermore Pool Type Reactor
UF *LPTR Reactor*
GS nuclear reactors
. nuclear research and test reactors
. . **Livermore Pool Type Reactor**

liverworts
USE **Bryophytes**

livestock
GS animals
. **livestock**
RT calves
cattle
deer
goats
horses
rangelands
sheep
swine
turkeys

lixiscopes
DEF Portable light weight battery operated low intensity x ray imaging systems with medical, industrial, and scientific applications. Used for Low Intensity X Ray Imaging Scopes.
UF *Low Intensity X Ray Imaging Scopes*
GS medical equipment
. x ray apparatus
. . **lixiscopes**
RT portable equipment
radiography
x ray astronomy
x ray imagery

lizards
GS animals
. vertebrates
. . reptiles
. . . **lizards**

Llanos Orientales (Colombia)
GS land
. grasslands
. . **Llanos Orientales (Colombia)**
. plains
. . **Llanos Orientales (Colombia)**
landforms
. plains
. . **Llanos Orientales (Colombia)**
RT Colombia

LMCR (reactors)
USE **liquid metal cooled reactors**

LMFBR
USE **liquid metal fast breeder reactors**

LNG
USE **liquefied natural gas**

load carrying capacity
(added August 1991)
SN (LIMITED TO STRUCTURAL MECHANICS)
DEF The capacity of a structure to bear loads.
GS mechanical properties
. yield strength
. . **load carrying capacity**
RT compressive strength
creep strength
critical loading
fracture strength
loads (forces)
∞ strength
structural failure
structural stability
structural strain
tensile strength

load distribution (forces)
GS distribution (property)
. **load distribution (forces)**
RT ∞ distribution
transverse loads

load factors
USE **loads (forces)**

load testing machines
RT ∞ machinery
∞ test equipment

load tests
RT compression tests
creep tests
destructive tests
fatigue tests
impact tests
loading rate
nondestructive tests
shock tests
specimen geometry
spin tests
static tests
tensile tests
∞ tests
variable amplitude loading

∞ **loading**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *dummy loads*
RT feeding (supplying)
filling
input
loading operations
loads (forces)
payloads
refilling
replenishment
shafts (machine elements)
sweep effect
variable amplitude loading

loading forces
USE **loads (forces)**

loading moments
GS moments
. **loading moments**
RT aerodynamic loads
bending moments
flexing
loads (forces)

mass distribution
moment distribution
pressure distribution
static loads
structural analysis
torque
transverse loads

loading operations
RT **feeders**
∞ **loading**
materials handling
∞ **operations**
unloading

loading rate
GS **rates (per time)**
. **loading rate**
RT **impact loads**
load tests
loads (forces)
strain rate
variable amplitude loading
velocity

loading waves
USE **elastic waves**
loads (forces)

loads (forces)
UF *load factors*
loading forces
loading waves
GS **loads (forces)**
. axial loads
. . axial compression loads
. compression loads
. . axial compression loads
. . impact loads
. contact loads
. . impact loads
. . rolling contact loads
. critical loading
. dynamic loads
. . aerodynamic loads
. . . blast loads
. . . gust loads
. . cyclic loads
. . rolling contact loads
. . thrust loads
. . transient loads
. . . gust loads
. . . impact loads
. . . landing loads
. . . shock loads
. . . . blast loads
. . variable amplitude loading
. . vibratory loads
. . wing loading
. edge loading
. random loads
. . gust loads
. static loads
. transverse loads
RT **ballast (mass)**
∞ **equilibrium**
∞ **force**
force distribution
Hugoniot equation of state
load carrying capacity
∞ **loading**
loading moments
loading rate
mass distribution
∞ **mechanics (physics)**
moment distribution
payloads
plane stress
pressure
pressure distribution
pressure effects
shafts (machine elements)
shearing
stress concentration
stress intensity factors
stresses
structural design criteria
weight (mass)
wind pressure

∞ **lobes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT **antenna design**
antenna radiation patterns
backlobes
sidelobes

local area networks
DEF Networks, generally microcomputer based, that enable users in the same location to use the same programs and equipment such as printers. Used for LAN (computer networks).
UF *LAN (computer networks)*
GS **networks**
. communication networks
. . **local area networks**
. computer networks
. . **local area networks**
RT **architecture (computers)**
data transmission
interprocessor communication
network control
protocol (computers)
VSAT (network)
wide area networks

local group (astronomy)
DEF The cluster of galaxies to which our galaxy belongs. It is a poor, irregular cluster with some 20 certain members including the Milky Way Galaxy, the Andromeda Galaxy, the Triangulum, four irregular galaxies, and about 13 intermediate or dwarf ellipticals.
GS **celestial bodies**
. **galactic clusters**
. . **local group (astronomy)**
RT **Andromeda Galaxy**
barred galaxies
cosmology
disk galaxies
dwarf galaxies
elliptical galaxies
Milky Way Galaxy
solar neighborhood
spiral galaxies
Virgo galactic cluster

local scientific survey module
GS **modules**
. **local scientific survey module**
RT **instrument packages**
lunar exploration
measuring instruments

local thermodynamic equilibrium
(added April 1991)
UF *LTE (astronomy)*
RT **stellar atmospheres**
stellar physics
thermodynamic equilibrium

localization
USE **position (location)**

LOCATES system
UF *Location of Air Traffic Satellites*
RT **air traffic control**
Beacon satellites
navigation satellites
satellite guidance
∞ **systems**

location
USE **position (location)**

Location of Air Traffic Satellites
USE **LOCATES system**

loci
GS **geometry**
. **Euclidean geometry**
. . **analytic geometry**
. . . **loci**
RT ∞ **centers**
conics
foci
line of sight
points (mathematics)
resolution

Lockheed 186 helicopter
USE **XH-51 helicopter**

Lockheed aircraft
GS **Lockheed aircraft**
. C-5 aircraft
. C-121 aircraft
. C-130 aircraft
. C-140 aircraft
. C-141 aircraft
. CL-823 aircraft
. Electra aircraft
. F-94 aircraft
. F-104 aircraft
. L-1011 aircraft
. L-2000 aircraft
. Lockheed model 18 aircraft
. P-3 aircraft
. S-3 aircraft
. SR-71 aircraft
. T-33 aircraft
. U-2 aircraft
. XH-51 helicopter
. XV-4 aircraft
RT ∞ **aircraft**

Lockheed C-5 aircraft
USE **C-5 aircraft**

Lockheed CL-595 helicopter
USE **XH-51 helicopter**

Lockheed CL-823 aircraft
USE **CL-823 aircraft**

Lockheed Constellation aircraft
USE **C-121 aircraft**

Lockheed L-2000 aircraft
USE **L-2000 aircraft**

Lockheed model 18 aircraft
GS **Lockheed aircraft**
. **Lockheed model 18 aircraft**
monoplanes
. **Lockheed model 18 aircraft**
transport aircraft
. **Lockheed model 18 aircraft**
RT ∞ **aircraft**

Lockheed U-2 aircraft
USE **U-2 aircraft**

Lockheed XV-4A aircraft
USE **XV-4 aircraft**

locking
UF *interlocking*
GS **locking**
. laser mode locking
RT fasteners
∞ joining
locks (fasteners)
retaining

∞ **locks**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT air locks
locks (fasteners)

locks (fasteners)
GS fasteners
. **locks (fasteners)**
RT locking
∞ locks

locomotion
UF *motility*
GS **locomotion**
. astronaut locomotion
. walking
RT exercise physiology
navigation
propulsion
wheelchairs

locomotives
RT diesel engines
handling equipment
rail transportation
windshields

locusts
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **locusts**
RT farm crops
foliage
infestation
vegetation

LOFAR
RT sonar
underwater acoustics

LOFTI satellites
USE **low frequency transionospheric satellites**

lofting
RT aircraft design
ascent trajectories
computer aided design
differential geometry
engineering drawings
mathematical models
spacecraft design
structural design
∞ surface geometry
templates

log periodic antennas
GS antennas
. directional antennas
. . **log periodic antennas**
RT antenna arrays
antenna design
broadband
dipole antennas
frequency response
parasitic elements (antennas)

log spiral antennas
GS antennas
. spiral antennas
. . **log spiral antennas**
RT dipole antennas

logarithmic receivers
GS receivers
. **logarithmic receivers**
RT communication equipment
frequency response
intermediate frequency amplifiers
transfer functions

logarithms
DEF The power to which a fixed number, called the base, usually 10 or e (2.7182818) must be raised to produce the value to which the logarithm corresponds.
GS analysis (mathematics)
. complex variables
. . exponential functions
. . . **logarithms**
functions (mathematics)
. transcendental functions
. . exponential functions
. . . **logarithms**
RT exponents

logging (industry)
DEF The business of felling trees, cutting them up into logs and transporting the logs to sawmills or to a place of sale.
RT forests
trees (plants)

∞ **logic**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT artificial intelligence
axioms
Boolean algebra
branching (mathematics)
complements (mathematics)
expert systems
fluid logic
fluidics
formalism
information theory
logic circuits
logic design
mathematical logic
paradoxes
philosophy
predicate calculus
predicate logic
∞ principles
temporal logic
threshold logic
transistor logic

logic circuits
UF *logic networks*
GS circuits
. digital electronics
. . **logic circuits**
. . . threshold gate
RT adding circuits
architecture (computers)
arithmetic and logic units
central processing units
computers
counting circuits
decisions
digital computers
fluid logic
gates (circuits)
∞ logic
logical elements
matrices (circuits)
multipliers
multivibrators
neural nets
programmable logic devices
∞ relay
switching circuits
threshold logic
transistor circuits
transistor logic

logic design
RT amplifier design
architecture (computers)
computer aided design
computer design
computer programming
∞ design
design analysis
hardware description languages
∞ logic
logic programming
logical elements
programmable logic devices
switching theory
transistor logic

logic networks
USE **logic circuits**

logic programming
GS computer programming
. **logic programming**
RT artificial intelligence
expert systems
logic design
temporal logic

logic units
USE **arithmetic and logic units**

logical elements
DEF In computers or data processing systems, the smallest building blocks which can be represented by operators in an appropriate system of symbolic logic. Typical logical elements are the AND gate and flip-flop, which can be represented as operators in a suitable symbolic logic. Used for decision elements.
UF *decision elements*
RT computer components
digital electronics
∞ elements
gates (circuits)
logic circuits
logic design

logistics
GS **logistics**
. lunar logistics
. space logistics
RT aircraft maintenance
Army-Navy instrumentation program
command and control
cranes
deployment
downtime
∞ electric equipment
energy policy
∞ facilities
inventory management
maintenance
matrix management
portable equipment

rapid transit systems
resource allocation
resources
services
shipyards
site selection
stockpiling
∞ storage
stowage (onboard equipment)
transportation
∞ travel
utilities

logistics management
GS management
. **logistics management**
. . inventory management
. . . inventory controls
RT ∞ facilities
maintenance
resources
services
spare parts
∞ storage

logistics over the shore (LOTS) carrier
RT military technology

LOH helicopter
USE **OH-6 helicopter**

Lokl rocket vehicle
GS rocket vehicles
. single stage rocket vehicles
. . **Lokl rocket vehicle**
. sounding rockets
. . **Lokl rocket vehicle**
RT solid propellant rocket engines
WASP sounding rocket

LOLA (simulator)
USE **lunar orbit and landing simulators**

Lomonosov current
GS circulation
. water circulation
. . water currents
. . . ocean currents
. . . . **Lomonosov current**
RT Atlantic Ocean
Gulf Stream
tropical regions

Long Duration Exposure Facility
UF *LDEF*
GS artificial satellites
. scientific satellites
. . **Long Duration Exposure Facility**
laboratories
. space laboratories
. . **Long Duration Exposure Facility**
space platforms
. **Long Duration Exposure Facility**
RT spaceborne experiments

long duration space flight
DEF Space flight involving interplanetary and/or interstellar travel. Used for extended duration space flight.
UF *extended duration space flight*
GS space flight
. **long duration space flight**
RT deep space
extraterrestrial environments
∞ flight
flyby missions
interplanetary flight
interstellar travel
manned Mars missions
manned space flight
Mars bases
∞ missions
planetary environments
space adaptation syndrome

Long Island (NY)
GS landforms
. islands
. . **Long Island (NY)**
RT Atlantic Ocean
New York

long period variables
USE **Mira variables**

long range navigation
USE **loran**

long range weather forecasting
GS forecasting
. weather forecasting
. . **long range weather forecasting**
meteorology
. weather forecasting
. . **long range weather forecasting**
RT Atmospheric General Circulation Models
numerical weather forecasting
statistical weather forecasting

long term effects
UF *secular perturbation*
RT celestial mechanics
climate
closed ecological systems
cycles
durability
∞ effects
life (durability)
life support systems
orbit perturbation
∞ performance
periodic variations
perturbation
storage stability
time temperature parameter
weather

Long Term Zonal Earth Energy Experiment
USE **LZEEBE satellite**

long wave radiation
GS electromagnetic radiation
. radio waves
. . **long wave radiation**
RT far infrared radiation
monochromatic radiation
∞ radiation
short wave radiation
solar radiation

long waves (meteorology)
USE **planetary waves**

longerons
UF *astromasts*
GS structural members
. **longerons**
RT keels
reinforcement (structures)
ribs (supports)
strakes
stringers
structural stability

∞ **longevity**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT life (durability)
life span

longitude
DEF Angular distance, along a primary great circle, from the adopted reference point; the angle between a reference plane through the polar axis and a second plane through that axis.
GS **longitude**
. solar longitude
RT coordinates
geodetic coordinates
latitude
position (location)

longitude measurement
RT latitude measurement
∞ measurement
navigation
positioning

longitudinal control
UF *pitch attitude control*
GS attitude control
. **longitudinal control**
RT aircraft control
altitude control
automatic control
∞ control
directional control
helicopter control
lateral control
manual control
missile control
pilot induced oscillation
pitch (inclination)
satellite attitude control
satellite control

longitudinal stability
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . attitude stability
. . . . **longitudinal stability**
stability
. dynamic stability
. . motion stability
. . . attitude stability
. . . . **longitudinal stability**
RT aerodynamic stability
aircraft stability
directional stability
flow stability
hovering stability
lateral stability
pitch (inclination)
pitching moments
POGO effects
rotary stability
spacecraft stability

longitudinal waves
DEF Waves in which the direction of displacement at each point of the medium is normal to the wave front.
GS **longitudinal waves**
. plane waves
RT beams (radiation)
dilatational waves
elastic waves
electrostatic waves
frequencies

normal shock waves
∞ radiation
seismic waves
shock waves
solar radiation
sound waves
transverse waves
wave packets
wavelengths
∞ waves

longshore currents
USE **coastal currents**

look angles (electronics)
DEF The solid angle in which an instrument operates effectively, generally used to describe radars, optical instruments, and space radiation detectors.
GS geometry
. Euclidean geometry
. . angles (geometry)
. . . **look angles (electronics)**
RT alignment
directivity
installing
instrument orientation
optical equipment
positioning
radar equipment

look angles (tracking)
DEF The elevation and azimuth at which a particular satellite is predicted to be found at a specified time.
GS geometry
. Euclidean geometry
. . angles (geometry)
. . . **look angles (tracking)**
RT azimuth
elevation angle
field of view

loop antennas
DEF Antennas whose configuration is that of a loop. If the current in the loop, or in the parallel turns of the loop is essentially uniform and the loop circumference is small compared with the wavelength, the radiation pattern approximates that of a magnetic dipole.
GS antennas
. directional antennas
. . **loop antennas**
RT aircraft antennas
loops
monopole antennas

loop transfer functions
(added September 1993)
GS functions (mathematics)
. transfer functions
. . **loop transfer functions**
RT control systems design
feedback control
loop transfer recovery

loop transfer recovery
(added September 1993)
DEF The recovery of the transfer properties of the controller in a feedback control system compensator design.
RT compensators
control stability
control systems design
control theory
error signals
feedback control
loop transfer functions
∞ recovery
systems stability

loops
GS **loops**
. corrosion test loops
RT circuits
closed cycles
loop antennas
toruses
trusses

LOR (rendezvous)
USE **lunar orbital rendezvous**

LORAC navigation system
GS navigation
. radio navigation
. . hyperbolic navigation
. . . **LORAC navigation system**
RT distance measuring equipment
navigation aids
navigation instruments
surface navigation
∞ systems

loran
DEF A two dimensional pulse synchronized radio navigation system to determine hyperbolic lines of position through pulse time differencing from a master compared to two slave stations. Used for long range navigation.
UF *long range navigation*
GS navigation
. radio navigation
. . hyperbolic navigation
. . . **loran**
. . . . loran C
. . . . loran D
RT air navigation
Decca navigation
distance measuring equipment
navigation aids
navigation instruments
polar navigation
solar compasses
surface navigation
surveys

loran C
GS navigation
. radio navigation
. . hyperbolic navigation
. . . loran
. . . . **loran C**
RT air navigation
Decca navigation
navigation aids

loran D
GS navigation
. radio navigation
. . hyperbolic navigation
. . . loran
. . . . **loran D**
RT air navigation
Decca navigation
navigation aids

Lorentz contraction
UF *Fitzgerald–Lorentz contraction*
RT relativity

Lorentz force
DEF The force affecting a charged particle due to the motion of the particle in a magnetic field.
RT charged particles
∞ force
magnetic fields
ponderomotive forces

Lorentz gas
GS gases
. ionized gases
. . **Lorentz gas**
particles
. charged particles
. . ionized gases
. . . **Lorentz gas**
RT gas dynamics
kinetic theory

Lorentz transformations
GS functions (mathematics)
. **Lorentz transformations**
RT Dirac equation
invariance
Mandelstam representation

LORV
USE **low observable reentry vehicles**

Los Alamos Molten Plutonium Reactor
GS nuclear reactors
. liquid cooled reactors
. . liquid metal cooled reactors
. . . **Los Alamos Molten Plutonium Reactor**
. nuclear research and test reactors
. . **Los Alamos Molten Plutonium Reactor**

Los Alamos Turret Reactor
USE **high temperature nuclear reactors**

Los Alamos Water Boiler Reactor
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . boiling water reactors
. . . . **Los Alamos Water Boiler Reactor**

loss of coolant
UF *coolant loss*
GS accidents
. **loss of coolant**
RT coolants
leakage
losses
nuclear reactors
reactor materials

losses
RT auditory defects
commerce
damage
depletion
eddy currents
energy dissipation
impairment
insertion loss
leakage
legal liability
liabilities
loss of coolant
ohmic dissipation
plasma loss
seepage
transmission loss

wastes
water loss
yield

lossless equipment
RT lossless materials

lossless materials
DEF Dielectric materials that do not dissipate energy or that do not dampen oscillations.
GS dielectrics
. lossless materials
RT lossless equipment
∞ materials

lossy media
DEF A material that dissipates electromagnetic or acoustic energy passing through it.
RT electromagnetic wave transmission
ionospheric propagation
transmission loss
wave propagation

lost wax process
USE **investment casting**

LOTS cargo ships
USE **cargo ships**

loudness
DEF The intensive attribute of an auditory sensation, in terms of which sounds may be ordered on a scale extending from soft to loud. Loudness is measured in sones. Loudness depends primarily upon the sound pressure of the stimulus, but it also depends upon the frequency and waveform of the stimulus.
RT acoustics
effective perceived noise levels
flux density
hearing
∞ intensity
level (quantity)
noise (sound)
noise measurement
noise reduction
power spectra
sound intensity
sound pressure
sound waves

loudspeakers
GS audio equipment
. loudspeakers
transducers
. sound transducers
. . electroacoustic transducers
. . . loudspeakers
RT monaural signals
radio receivers
sound generators

Louisiana
GS nations
. United States
. . Louisiana
RT Atchafalaya River Basin (LA)
Gulf of Mexico
Lake Pontchartrain (LA)
Mississippi Delta (LA)

∞ **lounges**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT mobile lounges
rooms
seats

louvers
RT apertures
baffles
∞ diffusers
∞ screening
shades
shielding
∞ shutters
slots
vents

Love waves
DEF Surface waves having a horizontal motion that is shear or transverse to the direction of propagation. Their velocity depends only on density and rigidity and not on bulk modulus. They are named after A.E.H. Love, the English mathematician who discovered them.
GS elastic waves
. seismic waves
. . Love waves
RT surface waves

low alloy steels
USE **high strength steels**

low altitude
GS altitude
. low altitude
RT elevation
lower atmosphere
midaltitude
nap-of-the-earth navigation
terrain following

low aspect ratio
GS ratios
. aspect ratio
. . low aspect ratio

low aspect ratio wings
UF *diamond wings*
GS airfoils
. wings
. . low aspect ratio wings
. . . delta wings
. . . trapezoidal wings
RT cruciform wings
fixed wings
rigid wings
wing planforms

low carbon steels
DEF Iron alloys containing carbon in low percentages that display temper and malleability characteristics not found in ordinary carbon steels.
GS alloys
. iron alloys
. . steels
. . . carbon steels
. . . . low carbon steels
RT iron

low concentrations
GS composition (property)
. concentration (composition)
. . low concentrations
RT dilution

low conductivity
RT electric current
electrical resistivity
transconductance

low cost
GS costs
. low cost
RT economy

low currents
GS electric current
. low currents
RT dark current
low voltage
plasma currents

low density flow
GS fluid flow
. low density flow
RT ∞ flow
molecular flow
rarefied gas dynamics
rarefied gases

low density gases
USE **rarefied gases**

low density materials
RT absorbents
absorbers (materials)
foams
granular materials
honeycomb cores
honeycomb structures
light elements
∞ materials
polyurethane foam
porous materials
porous plates
powder metallurgy

low density research
GS research
. low density research
RT blowdown wind tunnels
collisionless plasmas
composite materials
epoxy matrix composites
nonuniform plasmas
plasmas (physics)
rarefied gases
shock tubes
shock tunnels
shock wave luminescence
ultrahigh vacuum
vacuum apparatus

low density wind tunnels
GS test facilities
. wind tunnels
. . low density wind tunnels
RT hypersonic wind tunnels
hypervelocity wind tunnels
plasma jets
rarefied gas dynamics
shock tubes
shock tunnels
slip flow
supersonic wind tunnels

low Earth orbital environments
USE **Earth orbital environments**

low earth orbits
(added April 1995)
DEF Nominally circular Earth orbits of low altitude (typically between 100 and 1,000 km.) and short periodicity.
UF *LEO*
GS orbits
. Earth orbits
. . low earth orbits
RT Earth orbital environments
elliptical orbits
interplanetary transfer orbits
orbital mechanics
parking orbits

polar orbits
remote sensing
space commercialization
space stations
trajectory optimization

low frequencies
SN (30 TO 300 KHZ)
GS frequencies
. radio frequencies
. . **low frequencies**
. . . very low frequencies
RT ∞ bands
extremely low frequencies
high frequencies
intermediate frequencies
ultrahigh frequencies
very high frequencies

low frequency transionospheric satellites
UF *LOFTI satellites*
GS artificial satellites
. communication satellites
. . **low frequency transionospheric satellites**

low gravity
USE **microgravity**

low gravity manufacturing
GS manufacturing
. **low gravity manufacturing**
RT containerless melts
drop towers
fabrication
levitation melting
liquid bridges
Marangoni convection
metal foams
microgravity
∞ microgravity applications
space manufacturing
space processing
space tools
technologies

Low Intensity X Ray Imaging Scopes
USE **lixiscopes**

low latitudes
USE **tropical regions**

low level turbulence
GS turbulence
. atmospheric turbulence
. . **low level turbulence**
RT homogeneous turbulence

low mass
USE **mass**

low molecular weights
GS molecular weight
. **low molecular weights**
RT diatomic molecules
molecules
monatomic molecules
weight (mass)

low noise
RT preamplifiers
signal to noise ratios

low observable reentry vehicles
UF *LORV*
GS reentry vehicles
. **low observable reentry vehicles**
RT radar cross sections
reentry
reentry physics
∞ vehicles

low pass filters
DEF Wave filters having a single transmission band extending from zero frequency up to some critical or bounding frequency, not infinite.
RT bandstop filters
electric filters
electromagnetic wave filters
∞ filters
microwave filters
optical filters

low pressure
GS pressure
. **low pressure**
. . high altitude pressure
RT altitude tolerance
cyclogenesis
cyclones
∞ depression
high altitude environments
high pressure
hypobaric atmospheres
troughs
vacuum

low pressure chambers
USE **vacuum chambers**

∞ **low resistance**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT chemical properties
electrical resistance
flow resistance
mechanical properties
∞ resistance
thermal resistance
transconductance

low Reynolds number
SN (RN BELOW 2,000)
DEF A Reynolds number below the critical Reynolds number of a sphere.
GS dimensionless numbers
. Reynolds number
. . **low Reynolds number**
ratios
. Reynolds number
. . **low Reynolds number**
RT direct numerical simulation
high Reynolds number
laminar flow
viscosity

low speed
UF *low velocity*
GS rates (per time)
. **low speed**
velocity
. **low speed**
RT airspeed
flow velocity
ground speed
landing speed
subsonic speed

low speed stability
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . **low speed stability**
stability
. dynamic stability
. . motion stability
. . . **low speed stability**
RT aerodynamic stability
aerodynamic stalling
aircraft stability
attitude stability
controllability
dynamic tests
flight characteristics
flow stability
hovering stability
spacecraft stability

low speed wind tunnels
GS test facilities
. wind tunnels
. . **low speed wind tunnels**
. . . subsonic wind tunnels
RT blowdown wind tunnels

low temperature
GS temperature
. **low temperature**
. . cryogenic temperature
RT bay ice
cooling
cryogenics
freezing
frost
frost damage
ice formation
magnetic cooling
pressure ice
refrigerating

low temperature brazing
GS welding
. fusion welding
. . gas welding
. . . brazing
. . . . **low temperature brazing**
RT soldering

low temperature environments
GS environments
. **low temperature environments**
RT cold strength
cold weather
high altitude environments
lunar temperature
magnetic cooling
mountain inhabitants
thermal environments

low temperature physics
RT cryochemistry
cryogenics
high temperature superconductors
Kondo effect
∞ physics
∞ science
solidified gases
superconducting power transmission
superconductivity
YBCO superconductors

low temperature plasmas
USE **cold plasmas**

low temperature tests
GS environmental tests
. **low temperature tests**
RT chemical tests
cold strength
cold weather tests
cryostats
hardness tests
lubricant tests
melting points

nondestructive tests
quality control
temperature control
∞ tests
thermal expansion
thermal stability

low thrust
GS thrust
. **low thrust**
. . microthrust
RT high thrust
jet thrust
rocket thrust
variable thrust

low thrust propulsion
GS propulsion
. **low thrust propulsion**
. . electromagnetic propulsion
. . . magnetic sails
. . electrostatic propulsion
. . . ion propulsion
. . man operated propulsion systems
. . photonic propulsion
. . . laser propulsion
. . plasma propulsion
. . solar propulsion
. . . solar electric propulsion
. . . solar thermal propulsion
RT electric propulsion
microthrust
rocket thrust
space station propulsion
spacecraft propulsion
variable thrust

low turbulence
GS turbulence
. **low turbulence**
RT steady flow

low vacuum
SN (PRESSURES BETWEEN 3.001 AND 1.0 TORR)
DEF The condition in a gas filled space at pressures less than 760 torr corresponding approximately to the vapor pressure of water at 25 deg. C and to 1 inch of mercury.
GS pressure
. vacuum
. . **low vacuum**
RT high vacuum

low velocity
USE **low speed**

low visibility
GS visibility
. **low visibility**
RT aircraft landing
all-weather landing systems
hazards
haze
instrument flight rules
light transmission

low voltage
GS potential energy
. electric potential
. . **low voltage**
RT low currents

low volume ramjet engines
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . **low volume ramjet engines**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . **low volume ramjet engines**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . **low volume ramjet engines**

low weight
RT gravitation
microgravity
weightlessness

∞ **low wing aircraft**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ aircraft
aircraft configurations
Beech 99 aircraft
general aviation aircraft
hypersonic aircraft
jet aircraft
light aircraft
monoplanes
passenger aircraft
tailless aircraft
transport aircraft
turbofan aircraft
turboprop aircraft

lower atmosphere
SN (ALTITUDE BELOW ABOUT 50 KM)
DEF Generally, and quite loosely, that part of the atmosphere in which most weather phenomena occur (i.e., the troposphere and lower stratosphere); hence, used in contrast to the common meaning for the upper atmosphere.
GS Earth atmosphere
. **lower atmosphere**
. . troposphere
. . tropopause
RT biosphere
chemosphere
heterosphere
homosphere
Intasat satellite
LACATE (experiment)
low altitude
mesometeorology
middle atmosphere

Lower Atmospheric Composition Experiment
USE **LACATE (experiment)**

lower body negative pressure
DEF Application and/or measurement of reduced pressure in the portion of the body below the iliac crests. Used as a simulator or orthostatic stress or as an indicator of cardiovascular deconditioning in a weightless environment.
GS hemodynamics
. **lower body negative pressure**
pressure
. blood pressure
. . **lower body negative pressure**
RT acceleration stresses (physiology)
artificial gravity
cardiovascular system
gravitational effects
orthostatic tolerance
space flight stress
stress (physiology)
weightlessness

Lower California (Mexico)
UF *Baja California*
RT Mexico
North America

lower ionosphere
GS Earth atmosphere
. upper atmosphere
. . Earth ionosphere
. . . **lower ionosphere**
. . . . D region
RT E region

LOX (oxygen)
USE **liquid oxygen**

LOX-hydrocarbon rocket engines
USE **oxygen-hydrocarbon rocket engines**

LOX-hydrogen engines
USE **hydrogen oxygen engines**

LPTR Reactor
USE **Livermore Pool Type Reactor**

LQG control
USE **linear quadratic Gaussian control**

LQR
USE **linear quadratic regulator**

LR circuits
USE **RL circuits**

LR-62-RM-2 engine
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **LR-62-RM-2 engine**
RT Bullpup missiles

LR-87-AJ-5 engine
GS engines
. rocket engines
. . booster rocket engines
. . . **LR-87-AJ-5 engine**
. . liquid propellant rocket engines
. . . **LR-87-AJ-5 engine**
RT Titan 1 ICBM

LR-91-AJ-5 engine
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **LR-91-AJ-5 engine**
RT Titan ICBM

LRC circuits
USE **RLC circuits**

LRV (vehicle)
USE **lunar roving vehicles**

LSI
USE **large scale integration**

LSSM
UF *Lunar Surface Scientific Modules*
GS lunar spacecraft
. lunar landing modules
. . Lunar Module
. . . **LSSM**
manned spacecraft
. Lunar Module
. . **LSSM**
modules
. spacecraft modules
. . landing modules
. . . lunar landing modules
. . . . Lunar Module
. . . . . **LSSM**

soft landing spacecraft
. landing modules
. . lunar landing modules
. . . Lunar Module
. . . . **LSSM**
spacecraft components
. spacecraft modules
. . landing modules
. . . lunar landing modules
. . . . Lunar Module
. . . . . **LSSM**
RT Apollo project
lunar laboratories
∞ surfaces

LST
USE **Hubble Space Telescope**

LTE (astronomy)
USE **local thermodynamic equilibrium**

LTV aircraft
USE **Ling–Temco–Vought aircraft**

lubricant tests
RT **engine tests**
high temperature tests
low temperature tests
∞ **materials tests**
∞ **tests**
wear resistance

lubricants
DEF Substances interposed between two surfaces for the purpose of reducing the friction or wear between them.
GS **lubricants**
. gas lubricants
. high temperature lubricants
. lubricating oils
. solid lubricants
RT additives
boundary lubrication
graphite
greases
kerogen
liquid metals
lubrication
lubrication systems
maintenance
oils
petroleum products
squeeze films

lubricating oils
GS **lubricants**
. **lubricating oils**
oils
. **lubricating oils**
RT detergents
lubrication
mineral oils
petroleum products
shale oil

lubrication
GS **lubrication**
. boundary lubrication
. self lubrication
. spacecraft lubrication
. vapor phase lubrication
RT bearings
elastohydrodynamics
engines
friction reduction
gears
impregnating
liquid bearings
lubricants
lubricating oils
lubrication systems
maintenance
self lubricating materials
sliding
tribology

lubrication systems
RT automobiles
cooling systems
internal combustion engines
lubricants
lubrication
pumps
∞ systems
vapor phase lubrication

lucite (trademark)
USE **polymethyl methacrylate**

Luder bands
USE **plastic deformation**
yield point

Ludox (trademark)
DEF Composite material utilizing colloidal silica matrixes.
GS refractory materials
. **Ludox (trademark)**
RT densification
heat shielding
reentry shielding
spacecraft construction materials
thermal protection
tiles

lugs
RT fasteners
holders
studs (structural members)
supports

lumbar region
GS anatomy
. **lumbar region**
regions
. **lumbar region**
RT human body
sciatic region

lumbering areas
USE **forests**

lumens
DEF Units of luminous flux equal to the luminous flux radiated into a unit solid angle (steradian) from a point source having a luminous intensity of 1 candela.
GS pressure
. radiation pressure
. . **lumens**
rates (per time)
. flux density
. . radiant flux density
. . . **lumens**
RT light (visible radiation)
luminance
luminescence
luminosity
optical properties
radiance

luminaires
UF *electroluminescent lamps*
lamps
light bulbs
lights
GS lighting equipment
. **luminaires**
. . aircraft lights
. . airport lights
. . . runway lights
. . arc lamps
. . flash lamps
. . . alkali vapor lamps
. . mercury lamps
. . quartz lamps
. . searchlights
. . xenon lamps
RT ballasts (impedances)
bulbs
fixtures
∞ flares
∞ globes
illuminating
light (visible radiation)
light sources
projectors
visual signals

luminance
SN (LIMITED TO EMISSION RATE PER UNIT AREA OF VISIBLE RADIATION)
DEF In photometry, a measure of the intrinsic luminous intensity emitted by a source in a given direction; the illuminance produced by light from the source upon a unit surface area oriented normal to the line of sight at any distance from the source, divided by the solid angle subtended by the source at the receiving surface. Also called brightness but luminance is preferred.
GS pressure
. radiation pressure
. . luminous intensity
. . . **luminance**
rates (per time)
. flux density
. . radiant flux density
. . . luminous intensity
. . . . **luminance**
RT brightness
glare
illuminance
illuminating
∞ intensity
irradiance
light (visible radiation)
lumens
optical properties
photometry
sky brightness
solar flux density
stellar magnitude

luminescence
DEF Light emission by a process in which kinetic heat energy is not essential for the mechanism of excitation. Used for glow and noctilucence.
UF *glow*
noctilucence
GS emission
. light emission
. . **luminescence**
. . . bioluminescence
. . . cathode glow
. . . cathodoluminescence
. . . chemiluminescence
. . . electroluminescence
. . . fluorescence
. . . . laser induced fluorescence
. . . . phosphorescence
. . . . resonance fluorescence
. . . . x ray fluorescence
. . . lunar luminescence

. . . optical resonance
. . . photoluminescence
. . . . triboluminescence
. . . . x ray fluorescence
. . . shock wave luminescence
. . . sonoluminescence
. . . spacecraft glow
. . . thermoluminescence
RT afterglows
alkali vapor lamps
brightness
electron–hole drops
Fraunhofer line discriminators
∞ illumination
illuminators
incandescence
light (visible radiation)
light emitting diodes
lumens
luminosity
luminous intensity
noctilucent clouds
optical transition
plasma radiation
stellar luminosity
Stokes law of radiation
visibility

luminescent intensity
USE **luminous intensity**

luminosity
GS electromagnetic properties
. optical properties
. . **luminosity**
. . . stellar luminosity
RT brightness
emissivity
emittance
illuminance
incandescence
light (visible radiation)
lumens
luminescence
mass to light ratios
phosphene
radiance
radiant flux density
visibility

luminous flux density
USE **luminous intensity**

luminous intensity
SN (LIMITED TO EMISSION OR DETECTION RATE PER UNIT AREA OF VISIBLE RADIATION)
DEF Luminous energy per unit time per unit solid angle; the intensity (flux per unit solid angle) of visible radiation weighted to take into account the variable response of the human eye as a function of the wavelength of light; usually expressed in candles. Used for light intensity, luminescent intensity, and luminous flux density.
UF *light intensity*
luminescent intensity
luminous flux density
GS pressure
. radiation pressure
. . **luminous intensity**
. . . illuminance
. . . luminance
rates (per time)
. flux density
. . radiant flux density
. . . **luminous intensity**
. . . . illuminance
. . . . luminance
RT BL Lacertae objects
brightness
emittance
flux (rate)
incandescence
∞ intensity
irradiance
light (visible radiation)
luminescence
mass to light ratios
radiancy
Seyfert galaxies
solar flux density
stellar magnitude

lumped parameter systems
DEF Systems in which the parameters may be considered to represent, for purposes of analysis, a single inductance, capacitance, resistance, etc., throughout the frequency range of interest.
RT lumping
mathematical models
matrices (mathematics)
∞ systems

lumping
RT agglomeration
coagulation
collection
composition (property)
lumped parameter systems

LUNA lunar probes
USE **Lunik lunar probes**

lunar albedo
GS albedo
. **lunar albedo**
RT absorptance
cosmic ray albedo
Earth albedo
optical properties
surface properties

lunar atmosphere
UF *lunar ionosphere*
GS environments
. extraterrestrial environments
. . lunar environment
. . . **lunar atmosphere**
. . satellite atmospheres
. . . **lunar atmosphere**
RT moon
planetary atmospheres

lunar based equipment
(added December 1990)
GS **lunar based equipment**
. lunar construction equipment
. lunar excavation equipment
. lunar retroreflectors
RT ∞ equipment
lunar bases
lunar flying vehicles
lunar laboratories
lunar logistics
lunar mining
lunar shelters
lunar surface vehicles

lunar bases
GS space bases
. **lunar bases**
RT AEPS
∞ astronautics
∞ bases
lunar based equipment
lunar construction equipment
lunar laboratories
lunar mining
Mars bases
moon
orbiting lunar stations
space colonies
stations
terraforming

lunar cinematography
USE **lunar photography**

lunar communication
GS telecommunication
. space communication
. . **lunar communication**
. . . circumlunar communication
RT facsimile communication
interplanetary communication
lasers
moon
optical communication
radar
radio communication
satellite communication
spacecraft communication

lunar composition
GS composition (property)
. **lunar composition**
RT lunar core
moon
pre–Imbrian period
selenology

lunar construction equipment
(added December 1990)
GS lunar based equipment
. **lunar construction equipment**
RT lunar bases
lunar excavation equipment
lunar shelters
lunar surface vehicles

lunar core
GS cores
. **lunar core**
RT lunar composition
lunar geology
planetary cores
selenology

lunar craters
DEF A depression, usually circular, on the surface of the moon, usually with a raised rim called a ringwall.
GS craters
. **lunar craters**
. . Ptolemaeus Crater
. . Tycho crater
RT meteorite craters
moon
pre–Imbrian period
selenography
selenology

lunar crust
GS crusts
. **lunar crust**
RT Earth crust
moon
planetary crusts
selenography
selenology

lunar dust
GS particles

. dust
. . **lunar dust**
soils
. lunar soil
. . **lunar dust**
RT moon
selenology

lunar echoes
GS echoes
. **lunar echoes**
. . lunar radar echoes
RT radio echoes
selenology

lunar eclipses
DEF The phenomenon observed when the moon enters the shadow of the Earth.
GS eclipses
. **lunar eclipses**
RT moon
selenology

lunar effects
UF *lunar perturbation*
GS **lunar effects**
. lunar gravitational effects
. lunar tides
RT ∞ effects
orbit perturbation
selenology

lunar environment
GS environments
. extraterrestrial environments
. . **lunar environment**
. . . lunar atmosphere
RT aerospace environments
bioastronautics
exobiology
life support systems
moon
planetary environments
selenology
terraforming
thermal environments

lunar equator
GS equators
. **lunar equator**
RT infrared imagery
radar imagery
selenology

lunar escape devices
RT escape capsules
escape rockets

lunar evolution
GS evolution (development)
. **lunar evolution**
RT moon
pre-Imbrian period
selenology
solar system evolution

lunar excavation equipment
(added December 1990)
GS lunar based equipment
. **lunar excavation equipment**
RT ∞ equipment
excavation
lunar construction equipment
lunar mining
lunar resources
lunar surface vehicles
tractors

lunar exploration
GS exploration
. space exploration
. . **lunar exploration**
RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
Apollo lunar experiment module
Apollo Lunar Surface Experiments Package
Apollo project
Clementine spacecraft
EASEP
extraterrestrial resources
local scientific survey module
lunar resources
Mars exploration
moon
selenology

Lunar Exploration System for Apollo
UF *LESA (lunar exploration system)*
RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
Apollo project
∞ systems

lunar far side
RT libration
moon
selenology

lunar figure
RT selenology

lunar flight
GS space flight
. **lunar flight**
RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
circumlunar trajectories
cislunar space
Earth–Moon trajectories
∞ flight
flyby missions
moon–Earth trajectories
orbits

lunar flying vehicles
RT ∞ flight vehicles
lifting bodies
lunar based equipment
∞ vehicles

lunar geology
DEF The science that applies geologic principles and techniques to the study of the moon, especially its composition and the origin of its surface features.
GS geology
. **lunar geology**
RT geomorphology
lunar core
lunar maria
lunar seismographs
moon
moonquakes
planetary geology
pre-Imbrian period
regolith
seismology
selenology

lunar gravitation
GS gravitation
. **lunar gravitation**
RT moon
planetary gravitation
selenology

lunar gravitational effects
GS gravitational effects
. **lunar gravitational effects**
lunar effects
. **lunar gravitational effects**
RT ∞ effects
selenology

Lunar Gravity Simulator
GS simulators
. environment simulators
. . **Lunar Gravity Simulator**
RT gravitation

lunar ionosphere
USE **lunar atmosphere**

lunar laboratories
(added April 1993)
GS laboratories
. **lunar laboratories**
. . lunar receiving laboratory
RT LSSM
lunar based equipment
lunar bases
lunar observatories
space laboratories

lunar landing
GS landing
. spacecraft landing
. . **lunar landing**
RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight

Apollo 17 flight
Apollo lunar experiment module
crash landing
hard landing
planetary landing
soft landing
Surveyor project

lunar landing modules
GS lunar spacecraft
. **lunar landing modules**
.. Lunar Module
... Apollo lunar experiment module
... LSSM
... Lunar Module 5
... Lunar Module 7
modules
. spacecraft modules
.. landing modules
... **lunar landing modules**
.... Lunar Module
..... Apollo lunar experiment module
..... LSSM
..... Lunar Module 5
..... Lunar Module 7
soft landing spacecraft
. landing modules
.. **lunar landing modules**
... Lunar Module
.... Apollo lunar experiment module
.... LSSM
.... Lunar Module 5
.... Lunar Module 7
spacecraft components
. spacecraft modules
.. landing modules
... **lunar landing modules**
.... Lunar Module
..... Apollo lunar experiment module
..... LSSM
..... Lunar Module 5
..... Lunar Module 7
RT Apollo extension system
maneuverable spacecraft
manned spacecraft
reusable spacecraft
unmanned spacecraft

lunar landing sites
GS sites
. landing sites
.. **lunar landing sites**
RT moon
selenography

lunar launch
GS launching
. rocket launching
.. **lunar launch**
RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
orbital launching
Saturn project

lunar limb
RT libration
∞ limbs
moon
planetary limb
selenology

lunar logistics
GS logistics
. **lunar logistics**
RT life support systems
lunar based equipment
manned lunar surface vehicles
materials handling

lunar luminescence
GS emission
. light emission
.. luminescence
... **lunar luminescence**
RT moon
selenology

lunar magnetic fields
GS magnetic fields
. **lunar magnetic fields**
RT moon
selenology

lunar mantle
RT core–mantle boundary
crusts
Earth mantle
planetary mantles
planetary structure
regolith
selenology

lunar maps
GS maps
. **lunar maps**
RT astronomical maps
Clementine spacecraft
moon
selenography

lunar maria
GS maria
. **lunar maria**
RT basalt
lunar geology
lunar rocks
selenology

lunar mining
(added December 1990)
GS mining
. **lunar mining**
RT lunar based equipment
lunar bases
lunar excavation equipment
lunar resources
lunar rocks
lunar soil
mineral deposits
mines (excavations)
space commercialization
space industrialization
strip mining

lunar mobile laboratories
UF *MOLABS*
GS laboratories
. **lunar mobile laboratories**
surface vehicles
. lunar surface vehicles
.. **lunar mobile laboratories**
RT Apollo project
manned lunar surface vehicles
selenography

Lunar Module
UF *LEM (lunar module)*
GS lunar spacecraft
. lunar landing modules
.. **Lunar Module**
... Apollo lunar experiment module
... LSSM
... Lunar Module 5
... Lunar Module 7
manned spacecraft
. **Lunar Module**
.. Apollo lunar experiment module
.. LSSM
.. Lunar Module 5
.. Lunar Module 7
modules
. spacecraft modules
.. landing modules
... lunar landing modules
.... **Lunar Module**
..... Apollo lunar experiment module
..... LSSM
..... Lunar Module 5
..... Lunar Module 7
soft landing spacecraft
. landing modules
.. lunar landing modules
... **Lunar Module**
.... Apollo lunar experiment module
.... LSSM
.... Lunar Module 5
.... Lunar Module 7
spacecraft components
. spacecraft modules
.. landing modules
... lunar landing modules
.... **Lunar Module**
..... Apollo lunar experiment module
..... LSSM
..... Lunar Module 5
..... Lunar Module 7
RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
Apollo spacecraft
ascent propulsion systems

Lunar Module 5
GS lunar spacecraft
. lunar landing modules
.. Lunar Module
... **Lunar Module 5**
manned spacecraft
. Lunar Module
.. **Lunar Module 5**
modules
. spacecraft modules
.. landing modules
... lunar landing modules
.... Lunar Module
..... **Lunar Module 5**
soft landing spacecraft
. landing modules
.. lunar landing modules
... Lunar Module

. . . . **Lunar Module 5**
spacecraft components
. spacecraft modules
. . landing modules
. . . lunar landing modules
. . . . Lunar Module
. . . . . **Lunar Module 5**
RT Apollo spacecraft

Lunar Module 7
GS lunar spacecraft
. lunar landing modules
. . Lunar Module
. . . **Lunar Module 7**
manned spacecraft
. Lunar Module
. . **Lunar Module 7**
modules
. spacecraft modules
. . landing modules
. . . lunar landing modules
. . . . Lunar Module
. . . . . **Lunar Module 7**
soft landing spacecraft
. landing modules
. . lunar landing modules
. . . Lunar Module
. . . . **Lunar Module 7**
spacecraft components
. spacecraft modules
. . landing modules
. . . lunar landing modules
. . . . Lunar Module
. . . . . **Lunar Module 7**
RT Apollo spacecraft

Lunar Module Ascent Stage
RT **ascent**
ascent trajectories
rocket engines
stage separation

lunar observatories
GS observatories
. **lunar observatories**
RT astronomical observatories
lunar laboratories

lunar occultation
GS occultation
. **lunar occultation**
. . solar eclipses
RT Exosat satellite
moon
selenology
stellar occultation

lunar orbit and landing simulators
UF *LOLA (simulator)*
GS simulators
. **lunar orbit and landing simulators**
RT flight simulators
training simulators

lunar orbital rendezvous
UF *LOR (rendezvous)*
GS maneuvers
. orbital rendezvous
. . **lunar orbital rendezvous**
rendezvous
. space rendezvous
. . orbital rendezvous
. . . **lunar orbital rendezvous**
RT Earth orbital rendezvous
orbital mechanics
spacecraft trajectories

Lunar Orbiter
GS **artificial satellites**
. lunar satellites
. . **Lunar Orbiter**
. . . Lunar Orbiter 1
. . . Lunar Orbiter 2
. . . Lunar Orbiter 3
. . . Lunar Orbiter 4
. . . Lunar Orbiter 5
lunar spacecraft
. lunar satellites
. . **Lunar Orbiter**
. . . Lunar Orbiter 1
. . . Lunar Orbiter 2
. . . Lunar Orbiter 3
. . . Lunar Orbiter 4
. . . Lunar Orbiter 5

Lunar Orbiter 1
UF *Lunar Orbiter A*
GS **artificial satellites**
. lunar satellites
. . Lunar Orbiter
. . . **Lunar Orbiter 1**
lunar spacecraft
. lunar satellites
. . Lunar Orbiter
. . . **Lunar Orbiter 1**

Lunar Orbiter 2
UF *Lunar Orbiter B*
GS **artificial satellites**
. lunar satellites
. . Lunar Orbiter
. . . **Lunar Orbiter 2**
lunar spacecraft
. lunar satellites
. . Lunar Orbiter
. . . **Lunar Orbiter 2**

Lunar Orbiter 3
UF *Lunar Orbiter C*
GS **artificial satellites**
. lunar satellites
. . Lunar Orbiter
. . . **Lunar Orbiter 3**
lunar spacecraft
. lunar satellites
. . Lunar Orbiter
. . . **Lunar Orbiter 3**

Lunar Orbiter 4
UF *Lunar Orbiter D*
GS **artificial satellites**
. lunar satellites
. . Lunar Orbiter
. . . **Lunar Orbiter 4**
lunar spacecraft
. lunar satellites
. . Lunar Orbiter
. . . **Lunar Orbiter 4**

Lunar Orbiter 5
UF *Lunar Orbiter E*
GS **artificial satellites**
. lunar satellites
. . Lunar Orbiter
. . . **Lunar Orbiter 5**
lunar spacecraft
. lunar satellites
. . Lunar Orbiter
. . . **Lunar Orbiter 5**

Lunar Orbiter A
USE **Lunar Orbiter 1**

Lunar Orbiter B
USE **Lunar Orbiter 2**

Lunar Orbiter C
USE **Lunar Orbiter 3**

Lunar Orbiter D
USE **Lunar Orbiter 4**

Lunar Orbiter E
USE **Lunar Orbiter 5**

lunar orbits
UF *evection*
GS orbits
. **lunar orbits**
RT artificial satellites
circular orbits
circumlunar trajectories
cislunar space
command service modules
Earth orbits
Earth–Moon trajectories
elliptical orbits
equatorial orbits
Lissajous figures
moon
orbital mechanics
parking orbits
perilunes
polar orbits
satellite orbits
spacecraft orbits
transfer orbits

lunar perturbation
USE **lunar effects**

lunar phases
RT moon
∞ phases
selenology
terminator lines

lunar photographs
GS photographs
. **lunar photographs**
RT astronomical photography
photography
Ranger project
spaceborne photography

lunar photography
UF *lunar cinematography*
GS imagery
. photography
. . **lunar photography**
RT astronomical photography
black and white photography
infrared photography
moon
Ranger project
spaceborne photography

lunar probes
DEF Probes for exploring and reporting on conditions on or about the Moon.
GS lunar spacecraft
. **lunar probes**
. . Lunik lunar probes
. . . Lunik 2 lunar probe
. . . Lunik 3 lunar probe
. . . Lunik 9 lunar probe
. . . Lunik 10 lunar probe
. . . Lunik 11 lunar probe
. . . Lunik 12 lunar probe
. . . Lunik 13 lunar probe
. . . Lunik 14 lunar probe
. . . Lunik 16 lunar probe
. . . Lunik 17 lunar probe
. . . Lunik 19 lunar probe
. . . Lunik 20 lunar probe

. . . Lunik 22 lunar probe
. . Ranger lunar probes
. . . Ranger 1 lunar probe
. . . Ranger 2 lunar probe
. . . Ranger 3 lunar probe
. . . Ranger 4 lunar probe
. . . Ranger 5 lunar probe
. . . Ranger 6 lunar probe
. . . Ranger 7 lunar probe
. . . Ranger 8 lunar probe
. . . Ranger 9 lunar probe
. . . Ranger lunar landing vehicles
. . Surveyor lunar probes
. . . Surveyor 1 lunar probe
. . . Surveyor 2 lunar probe
. . . Surveyor 3 lunar probe
. . . Surveyor 4 lunar probe
. . . Surveyor 5 lunar probe
. . . Surveyor 6 lunar probe
. . . Surveyor 7 lunar probe
unmanned spacecraft
. space probes
. . **lunar probes**
. . . Lunik lunar probes
. . . . Lunik 2 lunar probe
. . . . Lunik 3 lunar probe
. . . . Lunik 9 lunar probe
. . . . Lunik 10 lunar probe
. . . . Lunik 11 lunar probe
. . . . Lunik 12 lunar probe
. . . . Lunik 13 lunar probe
. . . . Lunik 14 lunar probe
. . . . Lunik 16 lunar probe
. . . . Lunik 17 lunar probe
. . . . Lunik 19 lunar probe
. . . . Lunik 20 lunar probe
. . . . Lunik 22 lunar probe
. . . Ranger lunar probes
. . . . Ranger 1 lunar probe
. . . . Ranger 2 lunar probe
. . . . Ranger 3 lunar probe
. . . . Ranger 4 lunar probe
. . . . Ranger 5 lunar probe
. . . . Ranger 6 lunar probe
. . . . Ranger 7 lunar probe
. . . . Ranger 8 lunar probe
. . . . Ranger 9 lunar probe
. . . . Ranger lunar landing vehicles
. . . Surveyor lunar probes
. . . . Surveyor 1 lunar probe
. . . . Surveyor 2 lunar probe
. . . . Surveyor 3 lunar probe
. . . . Surveyor 4 lunar probe
. . . . Surveyor 5 lunar probe
. . . . Surveyor 6 lunar probe
. . . . Surveyor 7 lunar probe
RT Apollo project
Atlas Able 5 launch vehicle
maneuverable spacecraft
Pioneer project
Ranger project
soft landing spacecraft
Surveyor project

lunar programs
GS programs
. **lunar programs**
. . Apollo project
. . Surveyor project

lunar radar echoes
UF *lunar scattering*
GS echoes
. lunar echoes
. . **lunar radar echoes**
. radar echoes
. . **lunar radar echoes**
RT selenology

lunar radiation
GS extraterrestrial radiation
. **lunar radiation**
RT∞ radiation
selenology

lunar rangefinding
GS rangefinding
. **lunar rangefinding**
RT distance measuring equipment
laser range finders
measuring instruments
optical range finders
range finders

lunar rays
SN (EXCLUDES RADIATION)
RT meteorite craters
moon
∞ rays
selenography

lunar receiving laboratory
GS laboratories
. lunar laboratories
. . **lunar receiving laboratory**

lunar resources
(added August 1990)
GS resources
. extraterrestrial resources
. . **lunar resources**
RT lunar excavation equipment
lunar exploration
lunar mining
lunar rocks
lunar soil
lunar surface

lunar retroreflectors
GS lunar based equipment
. **lunar retroreflectors**
RT Apollo Lunar Surface Experiments Package
Earth–Moon system
geodesy
laser range finders
retroreflection
U.S.S.R. space program

lunar rocks
GS rocks
. **lunar rocks**
. . kreep
RT gabbro
impact melts
lunar maria
lunar mining
lunar resources
particle tracks
pre–Imbrian period
regolith
selenography
selenology

lunar rotation
GS gyration
. rotation
. . **lunar rotation**
rotating bodies
. **lunar rotation**
RT center of gravity
selenology
spin dynamics

lunar roving vehicles
UF *LRV (vehicle)*
GS surface vehicles
. lunar surface vehicles
. . **lunar roving vehicles**
. . . Lunokhod lunar roving vehicles
. . . manned lunar surface vehicles
. roving vehicles
. . **lunar roving vehicles**
. . . Lunokhod lunar roving vehicles
. . . manned lunar surface vehicles
RT research vehicles
∞ vehicles

lunar satellites
GS artificial satellites
. **lunar satellites**
. . Explorer 18 satellite
. . Explorer 28 satellite
. . IMP
. . Lunar Orbiter
. . . Lunar Orbiter 1
. . . Lunar Orbiter 2
. . . Lunar Orbiter 3
. . . Lunar Orbiter 4
. . . Lunar Orbiter 5
. . orbiting lunar stations
lunar spacecraft
. **lunar satellites**
. . Explorer 18 satellite
. . Explorer 28 satellite
. . IMP
. . Lunar Orbiter
. . . Lunar Orbiter 1
. . . Lunar Orbiter 2
. . . Lunar Orbiter 3
. . . Lunar Orbiter 4
. . . Lunar Orbiter 5
. . orbiting lunar stations
RT maneuverable spacecraft
manned spacecraft
perilunes
polar orbits
unmanned spacecraft

lunar scattering
USE **diffuse radiation**
lunar radar echoes

lunar seismographs
GS measuring instruments
. vibration meters
. . seismographs
. . . **lunar seismographs**
recording instruments
. seismographs
. . **lunar seismographs**
RT lunar geology
selenology

lunar shadow
GS shadows
. **lunar shadow**
RT eclipses
moon
selenology
solar eclipses

lunar shelters
GS shelters
. **lunar shelters**
RT inflatable structures
life support systems
lunar based equipment
lunar construction equipment
space colonies
survival
∞ tunnels

lunar soil
GS soils
. **lunar soil**
. . lunar dust
RT kreep
lunar mining
lunar resources
minerals
moon
penetrometers
selenology

lunar spacecraft
GS **lunar spacecraft**
. Apollo spacecraft
. . Apollo lunar experiment module
. lunar landing modules
. . Lunar Module
. . . Apollo lunar experiment module
. . . LSSM
. . . Lunar Module 5
. . . Lunar Module 7
. lunar probes
. . Lunik lunar probes
. . . Lunik 2 lunar probe
. . . Lunik 3 lunar probe
. . . Lunik 9 lunar probe
. . . Lunik 10 lunar probe
. . . Lunik 11 lunar probe
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. . . Lunik 20 lunar probe
. . . Lunik 22 lunar probe
. . Ranger lunar probes
. . . Ranger 1 lunar probe
. . . Ranger 2 lunar probe
. . . Ranger 3 lunar probe
. . . Ranger 4 lunar probe
. . . Ranger 5 lunar probe
. . . Ranger 6 lunar probe
. . . Ranger 7 lunar probe
. . . Ranger 8 lunar probe
. . . Ranger 9 lunar probe
. . . Ranger lunar landing vehicles
. . Surveyor lunar probes
. . . Surveyor 1 lunar probe
. . . Surveyor 2 lunar probe
. . . Surveyor 3 lunar probe
. . . Surveyor 4 lunar probe
. . . Surveyor 5 lunar probe
. . . Surveyor 6 lunar probe
. . . Surveyor 7 lunar probe
. lunar satellites
. . Explorer 18 satellite
. . Explorer 28 satellite
. . IMP
. . Lunar Orbiter
. . . Lunar Orbiter 1
. . . Lunar Orbiter 2
. . . Lunar Orbiter 3
. . . Lunar Orbiter 4
. . . Lunar Orbiter 5
. . orbiting lunar stations
RT Apollo 5 flight
Apollo 6 flight
artificial satellites
Clementine spacecraft
Halo Orbit space station
manned spacecraft
rendezvous spacecraft
space capsules
∞ spacecraft
Surveyor project
unmanned spacecraft

lunar surface
GS **satellite surfaces**
. **lunar surface**
RT Clementine spacecraft
lunar resources
selenology
surface layers
surface properties
∞ surfaces

Lunar Surface Scientific Modules
USE **LSSM**

lunar surface vehicles
GS surface vehicles
. **lunar surface vehicles**
. . lunar mobile laboratories
. . lunar roving vehicles
. . . Lunokhod lunar roving vehicles
. . . manned lunar surface vehicles
RT crawler tractors
lunar based equipment
lunar construction equipment
lunar excavation equipment
∞ surfaces
∞ vehicles
walking machines

lunar temperature
GS temperature
. **lunar temperature**
RT high temperature environments
low temperature environments
moon
selenology

lunar tides
DEF The parts of tides caused solely by the tide producing force of the moon.
GS lunar effects
. **lunar tides**
tides
. **lunar tides**
RT atmospheric tides
Earth tides
moonquakes
selenology

lunar topography
GS topography
. **lunar topography**
RT moon
selenography
selenology
surface properties
surface roughness

lunar trajectories
GS **trajectories**
. **spacecraft trajectories**
. . **lunar trajectories**
. . . circumlunar trajectories
. . . Earth–Moon trajectories
. . . moon–Earth trajectories
RT parking orbits
transfer orbits

lunation
USE **month**

luneberg lenses
USE **radar corner reflectors**

lung morphology
GS morphology
. **lung morphology**
RT alveoli
pulmonary lesions
respiratory diseases

lungs
GS anatomy
. respiratory system
. . **lungs**
. . . alveoli
RT alveolar air
atelectasis
bronchi
pleurae
pneumography
pneumothorax
pulmonary circulation
pulmonary functions
pulmonary lesions
spirometers

Lunik 2 lunar probe
GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 2 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 2 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 2 lunar probe**

Lunik 3 lunar probe
GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 3 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 3 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 3 lunar probe**

Lunik 9 lunar probe
GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 9 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 9 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 9 lunar probe**

Lunik 10 lunar probe
GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 10 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 10 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 10 lunar probe**

Lunik 11 lunar probe
GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 11 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 11 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 11 lunar probe**

Lunik 12 lunar probe
GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 12 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 12 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 12 lunar probe**

Lunik 13 lunar probe
GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 13 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 13 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 13 lunar probe**

Lunik 14 lunar probe
GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 14 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 14 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 14 lunar probe**

Lunik 16 lunar probe
GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 16 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 16 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 16 lunar probe**

Lunik 17 lunar probe
GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 17 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 17 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 17 lunar probe**

Lunik 19 lunar probe
GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 19 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 19 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 19 lunar probe**
RT U.S.S.R. space program

Lunik 20 lunar probe
GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 20 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 20 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 20 lunar probe**

Lunik 22 lunar probe
GS lunar spacecraft
. lunar probes
. . Lunik lunar probes
. . . **Lunik 22 lunar probe**
Soviet spacecraft
. Lunik lunar probes
. . **Lunik 22 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Lunik lunar probes
. . . . **Lunik 22 lunar probe**
RT U.S.S.R. space program

Lunik lunar probes
DEF Russian term for a space probe launched to the moon's vicinity or to impact on the Moon. Used for LUNA lunar probes.
UF *LUNA lunar probes*
GS lunar spacecraft
. lunar probes
. . **Lunik lunar probes**
. . . Lunik 2 lunar probe
. . . Lunik 3 lunar probe
. . . Lunik 9 lunar probe
. . . Lunik 10 lunar probe
. . . Lunik 11 lunar probe
. . . Lunik 12 lunar probe
. . . Lunik 13 lunar probe
. . . Lunik 14 lunar probe
. . . Lunik 16 lunar probe
. . . Lunik 17 lunar probe
. . . Lunik 19 lunar probe
. . . Lunik 20 lunar probe
. . . Lunik 22 lunar probe
Soviet spacecraft
. **Lunik lunar probes**
. . Lunik 2 lunar probe
. . Lunik 3 lunar probe
. . Lunik 9 lunar probe
. . Lunik 10 lunar probe
. . Lunik 11 lunar probe
. . Lunik 12 lunar probe
. . Lunik 13 lunar probe
. . Lunik 14 lunar probe
. . Lunik 16 lunar probe
. . Lunik 17 lunar probe
. . Lunik 19 lunar probe
. . Lunik 20 lunar probe
. . Lunik 22 lunar probe
unmanned spacecraft
. space probes
. . lunar probes
. . . **Lunik lunar probes**
. . . . Lunik 2 lunar probe
. . . . Lunik 3 lunar probe
. . . . Lunik 9 lunar probe
. . . . Lunik 10 lunar probe
. . . . Lunik 11 lunar probe
. . . . Lunik 12 lunar probe
. . . . Lunik 13 lunar probe
. . . . Lunik 14 lunar probe
. . . . Lunik 16 lunar probe
. . . . Lunik 17 lunar probe
. . . . Lunik 19 lunar probe
. . . . Lunik 20 lunar probe
. . . . Lunik 22 lunar probe
RT Lunokhod lunar roving vehicles
U.S.S.R. space program

Lunokhod lunar roving vehicles
GS surface vehicles
. lunar surface vehicles
. . lunar roving vehicles
. . . **Lunokhod lunar roving vehicles**
. roving vehicles
. . lunar roving vehicles
. . . **Lunokhod lunar roving vehicles**
RT Lunik lunar probes
Marsokhod Mars roving vehicles
U.S.S.R. space program
∞ vehicles

luster
DEF The appearance characteristic of a specimen due to pronounced changes in intensity of light reflected from elemental areas of the specimen when the angle of illumination or view is changed. Used for dullness.
UF *dullness*
RT brightness
finishes
glare
reflectance

lutetium
GS chemical elements
. nuclides
. . isotopes
. . . **lutetium**
. . . . lutetium isotopes
. rare earth elements
. . **lutetium**
. . . lutetium isotopes
metals
. rare earth elements
. . **lutetium**
. . . lutetium isotopes

lutetium 176
USE **lutetium isotopes**

lutetium compounds
GS rare earth compounds
. **lutetium compounds**
RT ∞ chemical compounds
∞ metal compounds

lutetium isotopes
UF *lutetium 176*
GS chemical elements
. nuclides
. . isotopes
. . . lutetium
. . . . **lutetium isotopes**
. rare earth elements
. . lutetium
. . . **lutetium isotopes**
metals
. rare earth elements
. . lutetium
. . . **lutetium isotopes**

Luxembourg
GS nations
. **Luxembourg**
RT Europe
Luxembourg space program

Luxembourg effect
RT∞ effects
ionospheric cross modulation
ionospheric propagation

Luxembourg space program
(added March 1989)
GS programs
. space programs
. . European space programs
. . . **Luxembourg space program**
RT Luxembourg

Lyapunov functions
USE **Liapunov functions**

Lybia
USE **Libya**

Lyman alpha radiation
DEF The radiation emitted by hydrogen at 1216 angstrom, first observed in the solar spectrum by rocket borne spectrographs. Lyman alpha is very important in the heating of the upper atmosphere thus affecting other atmospheric phenomena.
GS electromagnetic radiation
. ultraviolet radiation
. . far ultraviolet radiation
. . . **Lyman alpha radiation**
RT atomic spectra
extraterrestrial radiation
polarized electromagnetic radiation
∞ radiation
ultraviolet astronomy

Lyman beta radiation
GS electromagnetic radiation
. ultraviolet radiation
. . far ultraviolet radiation
. . . **Lyman beta radiation**
RT atomic spectra
extraterrestrial radiation
polarized electromagnetic radiation
∞ radiation
ultraviolet astronomy

Lyman spectra
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . line spectra
. . . . **Lyman spectra**
RT atomic spectra
electronic spectra
emission spectra
H lines
solar spectra
spectral theory
ultraviolet spectra

lymph
GS body fluids
. **lymph**
RT lymphocytes

lymphocytes
GS cells (biology)
. blood cells
. . leukocytes
. . . **lymphocytes**
RT immune systems
lymph

lyophilization
USE **colloiding**

lyophils
USE **colloids**

Lyra constellation
GS constellations
. **Lyra constellation**
RT celestial bodies
celestial sphere
stars

lysergine
GS bases (chemical)
. alkaloids
. . **lysergine**
nitrogen compounds
. alkaloids
. . **lysergine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . alkaloids
. . . . **lysergine**

lysimeters
DEF Instruments for measuring the water percolating through soils and determining the materials dissolved by the water.
GS measuring instruments
. **lysimeters**
RT ground water
moisture content
percolation
soil moisture
soils
water balance
water pollution

lysine
GS acids
. amino acids
. . **lysine**
. carboxylic acids
. . **lysine**
organic compounds
. amino acids
. . **lysine**
. carboxylic acids
. . **lysine**
RT digesting
lysogenesis

Lysithea
(added January 1996)
DEF A natural satellite of Jupiter orbiting at a mean distance of 11,720,000 kilometers.
GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . **Lysithea**
RT Jupiter (planet)

lysogenesis
RT disintegration
lysine

lysosomes
GS organelles
. **lysosomes**
RT cells (biology)
cytology
enzyme activity
lysozyme

lysozyme
GS biopolymers
. proteins
. . enzymes
. . . **lysozyme**
organic compounds
. proteins
. . enzymes
. . . **lysozyme**
RT body fluids
lysosomes

LZEEBE satellite
UF *Earth Energy Budget Experiment*
Long Term Zonal Earth Energy Experiment
Zonal Earth Energy Budget Experiment
GS artificial satellites
. scientific satellites
. . **LZEEBE satellite**

M

M region
GS regions
. **M region**
RT geomagnetism
solar atmosphere
solar corpuscular radiation
solar wind

M stars
GS celestial bodies
. stars
. . late stars
. . . cool stars
. . . . **M stars**
. . . . . Van Biesbroeck star
RT asymptotic giant branch stars
flare stars
giant stars
main sequence stars
Mira variables
red giant stars
S stars
subgiant stars
supergiant stars
symbiotic stars

M wings
USE **variable sweep wings**

M-1 engine
UF *AJ-1000 engine*
GS engines
. rocket engines
. . booster rocket engines
. . . **M-1 engine**
. . liquid propellant rocket engines
. . . hydrogen oxygen engines
. . . . **M-1 engine**
RT Nova launch vehicles
Saturn 1 launch vehicles
Saturn 1B launch vehicles

M-2 lifting body
GS lifting bodies
. lifting reentry vehicles
. . **M-2 lifting body**
. . . M-2F2 lifting body
reentry vehicles
. maneuverable reentry bodies
. . lifting reentry vehicles
. . . **M-2 lifting body**
. . . . M-2F2 lifting body

M-46 engine
GS engines
. rocket engines
. . solid propellant rocket engines
. . . **M-46 engine**
RT Falcon missile

M-55 engine
GS engines
. rocket engines
. . booster rocket engines
. . . **M-55 engine**
. . solid propellant rocket engines
. . . **M-55 engine**
RT Minuteman ICBM

M-58 engine
GS engines
. rocket engines
. . solid propellant rocket engines
. . . **M-58 engine**
RT Minuteman ICBM

M-57 engine
GS engines
. rocket engines
. . solid propellant rocket engines
. . . **M-57 engine**
RT Minuteman ICBM

M-100 engine
GS engines
. rocket engines
. . **M-100 engine**

M-2F2 lifting body
GS lifting bodies
. lifting reentry vehicles
. . M-2 lifting body
. . . **M-2F2 lifting body**
reentry vehicles
. maneuverable reentry bodies
. . lifting reentry vehicles
. . . M-2 lifting body
. . . . **M-2F2 lifting body**

M-2F3 lifting body
GS lifting bodies
. **M-2F3 lifting body**

MA-2 engine
GS engines
. rocket engines
. . booster rocket engines
. . . **MA-2 engine**
. . liquid propellant rocket engines
. . . **MA-2 engine**
RT Atlas ICBM
Vernier engines

MA-2 mission
USE **Mercury MA-2 flight**

MA-3 engine
GS engines
. rocket engines
. . booster rocket engines
. . . **MA-3 engine**
. . liquid propellant rocket engines
. . . **MA-3 engine**
RT Atlas ICBM
Vernier engines

MA-3 flight
USE **Mercury MA-3 flight**

MA-4 flight
USE **Mercury MA-4 flight**

MA-5 engine
GS engines
. rocket engines
. . booster rocket engines
. . . **MA-5 engine**
. . liquid propellant rocket engines
. . . **MA-5 engine**
RT Atlas launch vehicles
Atlas SLV-3 launch vehicle
Vernier engines

MA-5 flight
USE **Mercury MA-5 flight**

MA-8 flight
USE **Mercury MA-8 flight**

MA-9 flight
USE **Mercury MA-9 flight**

maars
USE **craters**

Mace missiles
GS missiles
. surface to surface missiles
. . **Mace missiles**
RT booster rocket engines
J-33 engine
solid propellant rocket engines
turbojet engines

Mach cones
DEF The cone shaped shock waves theoretically emanating from an infinitesimally small particle moving at supersonic speed through a fluid medium. It is the locus of the Mach lines. The cone shaped shock waves generated by a sharp pointed body, as at the nose of a high speed aircraft.
GS cones
. **Mach cones**
elastic waves
. shock waves
. . **Mach cones**
RT acoustic velocity
bow waves
hypersonic shock
sound waves
supersonic flight
supersonic flow
supersonics

Mach inertia principle
GS inertia
. inertia principle
. . **Mach inertia principle**
RT equations of motion
moments of inertia

Mach number
DEF A number expressing the ratio of the speed of a body or a point on a body with respect to the surrounding air or other fluid, or the speed of a flow, to the speed of sound in the medium; the speed represented by this number. Used for critical Mach number and Glauert coefficient.
UF *critical Mach number*
Glauert coefficient
GS dimensionless numbers
. **Mach number**
ratios
. **Mach number**
RT acoustic velocity
aerodynamics
airspeed
shock waves
superharmonics
sweep angle

Mach reflection
DEF The reflection of a shock wave from a rigid wall in which the shock strength of the reflected wave and the angle of reflection both have the smaller of the two values theoretically possible.
GS reflection
. wave reflection
. . **Mach reflection**
RT shock waves

Mach-Zehnder interferometers
GS measuring instruments
. interferometers

. . **Mach–Zehnder interferometers**
RT **aerodynamics**
argon lasers
carbon dioxide lasers
diffractometers
gas lasers
goniometers
optical equipment
optical measuring instruments
Schlieren photography

machine learning
(added May 1989)
UF *learning machines*
RT **adaptive control**
artificial intelligence
automata theory
cybernetics
feedback control
genetic algorithms
∞ **machinery**
self organizing systems
teaching machines

machine life
USE **service life**

machine oriented languages
GS languages
. programming languages
. . **machine oriented languages**
RT ALGOL
Assembly language
autocoders
language programming
PL/1

machine recognition
USE **artificial intelligence**

machine storage
USE **computer storage devices**
core storage

machine tools
GS tools
. **machine tools**
. . boring machines
. . grinding machines
. . lathes
. . . turret lathes
. . milling machines
. . shapers
RT cutters
dies
drills
∞ **machinery**
machining
mandrels
mechanical devices
mechanical engineering
metal cutting
numerical control
presses
punches
saws
shears
taps
ultrasonic cleaning

machine translation
GS linguistics
. **machine translation**
translating
. **machine translation**
RT computer programs
information theory
language programming
languages
natural language processing

machine vision
USE **computer vision**

machine–independent programs
GS computer programs
. **machine–independent programs**
RT computer programming
computers
multiprogramming

∞ **machinery**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT boring machines
computers
drafting machines
engines
fatigue testing machines
grinding machines
ground effect machines
impact testing machines
levers
load testing machines
machine learning
machine tools
mechanical engineering
∞ **mechanism**
mechanization
milling machines
positioning devices (machinery)
refrigerating machinery
∞ **rotating electrical machines**
self focusing
teaching machines
tide powered machines
tools
turbomachinery
Turing machines
vibration simulators
walking machines
waterwave powered machines
welding machines
windmills (windpowered machines)

machining
UF *material removal (machining)*
GS **machining**
. **chemical machining**
. . **electrochemical machining**
. **hot machining**
. **laser machining**
. **micromachining**
. **milling (machining)**
. **spark machining**
. **ultrasonic machining**
RT∞ **cut–off**
cutting
drilling
finishes
forming techniques
grinding (material removal)
grooving
knurling
laser cutting
machine tools
metal cutting
metal working
planing
residual stress
setups
surface finishing
surface roughness
tooling
V grooves

Macintosh PC
USE **Macintosh personal computers**

Macintosh personal computers
(added September 1992)
UF *Macintosh PC*
GS data processing equipment
. computers
. . digital computers
. . . microcomputers
. . . . personal computers
. . . . . **Macintosh personal computers**
RT computer graphics
computer programs

MacLaurin series
UF *McLaurin series*
GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . power series
. . . . Taylor series
. . . . . **MacLaurin series**
. real variables
. . series (mathematics)
. . . power series
. . . . Taylor series
. . . . . **MacLaurin series**

macroclimate
USE **climate**

macromolecules
(added March 1990)
GS **molecules**
. **macromolecules**
RT **molecular chains**
molecular structure
molecular weight
∞ **polymers**
proteins

macrophages
GS cells (biology)
. **macrophages**
RT tissues (biology)

macroscopic equations
RT∞ equations
∞ measurement
∞ properties
statistical mechanics

macular vision
USE **vision**

Madagascar
(added September 1993)
UF *Malagasy Republic*
GS landforms
. islands
. . **Madagascar**
nations
. **Madagascar**
RT Africa
Indian Ocean

Maffei galaxies
GS celestial bodies
. **galaxies**
. . **Maffei galaxies**
RT nebulae
radio astronomy
radio galaxies
radio sources (astronomy)
spiral galaxies

magazines (supply chambers)
RT ammunition
photographic film
spools

Magdalena–Cauca Valley (Colombia)
GS landforms
. **Magdalena–Cauca Valley (Colombia)**
valleys
. **Magdalena–Cauca Valley (Colombia)**
RT Colombia
South America

Magellan Mission (ESA)
USE **Magellan ultraviolet astronomy satellite**

Magellan project (NASA)
SN (DOES NOT INCLUDE THE MAGELLAN ULTRAVIOLET ASTRONOMY SATELLITE)
DEF A Venus exploratory mission to acquire radar imagery and topographic profiles of the planet surface and determine the characteristics of the Venusian gravity field. (This term is used to designate general project reviews, chronologies, and project management and planning.) Used for Venus Radar Mapper Project.
UF *Venus Radar Mapper Project*
GS programs
. NASA programs
. . NASA space programs
. . . **Magellan project (NASA)**
. projects
. . **Magellan project (NASA)**
. space programs
. . NASA space programs
. . . **Magellan project (NASA)**
RT Magellan spacecraft (NASA)
space exploration
space missions
Venus orbiting imaging radar (spacecraft)
Venus probes
Venus surface

Magellan spacecraft (NASA)
SN (DOES NOT INCLUDE THE MAGELLAN ULTRAVIOLET ASTRONOMY SATELLITE)
DEF A Venus probe incorporating Voyager and Galileo hardware designs equipped with a synthetic aperture radar system to acquire surface imagery, altimetric profiles, and surface radiothermal emissivities. Earth-based Doppler radio tracking of the spacecraft will be used to derive gravimetric data. (This term designates the spacecraft intrinsic and support hardware, instrumentation acquired data.) Used for Venus Radar Mapper.
UF *Venus Radar Mapper*
GS interplanetary spacecraft
. Venus probes
. . **Magellan spacecraft (NASA)**
unmanned spacecraft
. space probes
. . Venus probes
. . . **Magellan spacecraft (NASA)**
RT Magellan project (NASA)
radar imagery
∞ spacecraft
synthetic aperture radar
Venus orbiting imaging radar (spacecraft)
Venus surface

Magellan ultraviolet astronomy satellite
DEF This ESA mission will provide high resolution spectra of celestial sources down to sixteenth magnitude over the extreme ultraviolet wavelength range (between 50 and 150 nm). This mission is still in the study phase. Used for Magellan Mission (ESA).
UF *Magellan Mission (ESA)*
GS artificial satellites
. ESA satellites
. . **Magellan ultraviolet astronomy satellite**
. scientific satellites
. . astronomical satellites
. . . **Magellan ultraviolet astronomy satellite**
ESA spacecraft
. ESA satellites
. . **Magellan ultraviolet astronomy satellite**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Magellan ultraviolet astronomy satellite**
RT extreme ultraviolet radiation
far ultraviolet radiation
spaceborne astronomy

Magellanic clouds
GS celestial bodies
. galaxies
. . **Magellanic clouds**
RT ∞ clouds
nebulae
Orion nebula
star clusters
stars
supernova 1987A

magic tees
DEF Compound waveguides or coaxial tees with four arms which exhibit directional characteristics, when properly matched, so that a signal entering one arm will be split between two of the other arms but not the third. A signal entering another arm is likewise split with half the energy entering one of the arms common to the other input but not its second arm and the other half of the energy entering the arm not used by the other input. Magic tees are used in radar as transmitter receiver duplexers.
RT duplexers

magma
DEF Naturally occurring mobile rock materials, generated within the Earth and capable of intrusion and extrusion, from which igneous rocks are thought to have been derived by solidification and related processes.
GS geophysical fluids
. **magma**
RT igneous rocks
lava
petrogenesis
regolith
rhyolite
rocks
soils

magnesium
GS chemical elements
. **magnesium**
. . magnesium isotopes
metals
. **magnesium**
. . magnesium isotopes

magnesium alloys
GS alloys
. light alloys
. . **magnesium alloys**
RT aluminum–lithium alloys
bismuth alloys
lithium alloys
silicon alloys

magnesium bromides
GS halogen compounds
. bromine compounds
. . bromides
. . . **magnesium bromides**
. halides
. . bromides
. . . **magnesium bromides**
. . metal halides
. . . **magnesium bromides**
magnesium compounds
. **magnesium bromides**

magnesium cells
DEF Primary cells with the negative electrodes made of magnesium or its alloy.
GS electric generators
. direct power generators
. . primary batteries
. . . dry cells
. . . . **magnesium cells**
electrochemical cells
. electric batteries
. . primary batteries
. . . dry cells
. . . . **magnesium cells**
RT chemical auxiliary power units
electrolytic polarization

magnesium chlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . **magnesium chlorides**
. halides
. . chlorides
. . . **magnesium chlorides**
magnesium compounds
. **magnesium chlorides**

magnesium compounds
GS **magnesium compounds**
. brucite
. chlorophyllis
. cordierite
. dolomite (mineral)
. enstatite
. forsterite
. magnesium bromides
. magnesium chlorides
. magnesium fluorides
. magnesium germanates
. magnesium germanides
. magnesium oxides
. . akermanite
. . periclase
. magnesium perchlorates
. magnesium sulfates
. . hexahedrite
. magnesium titanates
. merwinite
. monticellite
. talc
RT ∞ alkaline earth compounds
∞ chemical compounds
∞ metal compounds

magnesium fluorides
GS halogen compounds

. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **magnesium fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **magnesium fluorides**
. . metal halides
. . . metal fluorides
. . . . **magnesium fluorides**
magnesium compounds
. **magnesium fluorides**

magnesium germanates
GS germanium compounds
. germanates
. . **magnesium germanates**
magnesium compounds
. **magnesium germanates**

magnesium germanides
GS germanium compounds
. germanides
. . **magnesium germanides**
magnesium compounds
. **magnesium germanides**

magnesium isotopes
GS chemical elements
. magnesium
. . **magnesium isotopes**
. nuclides
. . isotopes
. . . **magnesium isotopes**
metals
. magnesium
. . **magnesium isotopes**

magnesium oxides
GS chalcogenides
. oxides
. . metal oxides
. . . alkaline earth oxides
. . . . **magnesium oxides**
. . . . . akermanite
. . . . . periclase
magnesium compounds
. **magnesium oxides**
. . akermanite
. . periclase

magnesium perchlorates
GS halogen compounds
. chlorine compounds
. . perchlorates
. . . **magnesium perchlorates**
magnesium compounds
. **magnesium perchlorates**

magnesium sulfates
GS magnesium compounds
. **magnesium sulfates**
. . hexahedrite
sulfur compounds
. sulfates
. . **magnesium sulfates**
. . . hexahedrite
RT bloedite

magnesium titanates
GS magnesium compounds
. **magnesium titanates**
titanium compounds
. titanates
. . **magnesium titanates**

Magnesyn (trademark)
USE **servomotors**

magnet coils
GS electric coils
. magnetic coils
. . **magnet coils**
RT ∞ coils
electromagnetism
electromagnets
field coils
inductors
magnetic circuits
magnetic cores
magnetic energy storage
magnets
saturable reactors
solenoids
superconducting magnets
toroids
transformers
wire winding
yokes

magnetic absorption
USE **electromagnetic absorption**

magnetic amplifiers
GS amplifiers
. **magnetic amplifiers**
RT magnetostatic amplifiers
nonlinearity
power amplifiers
saturable reactors
voltage amplifiers

magnetic annular arc
RT ∞ arcs
current distribution
plasma accelerators
plasma control
plasma propulsion

magnetic annular shock tubes
UF *MAST shock tubes*
GS shock wave generators
. shock tubes
. . **magnetic annular shock tubes**

magnetic anomalies
UF *geomagnetic anomalies*
GS anomalies
. **magnetic anomalies**
. . geomagnetic hollow
RT aeromagnetism
geomagnetism
nonuniform magnetic fields

magnetic bearings
DEF Any application of the principle in which something capable of rotation and translation is held by the use of electromagnetic force without touching it. Applications range from small instruments to very large forces.
GS bearings
. **magnetic bearings**
RT levitation
magnetic suspension

magnetic charge density
UF *scalar magnetic charge*
GS divergence
. **magnetic charge density**
RT ∞ charging
constitutive equations
Maxwell equation

magnetic circuits
GS circuits
. **magnetic circuits**
RT flux (rate)
lines of force
magnet coils
saturable reactors
transformers

magnetic clouds
GS magnetic fields
. **magnetic clouds**
particles
. charged particles
. . plasma clouds
. . . **magnetic clouds**
RT ∞ clouds
interplanetary magnetic fields
interplanetary medium
interstellar gas
interstellar magnetic fields
magnetic field configurations
solar corona
solar wind
stellar mass ejection

magnetic coils
GS electric coils
. **magnetic coils**
. . field coils
. . magnet coils
RT ∞ coils
electromagnetic hammers
electromagnetism
flux pumps

magnetic compasses
DEF Compasses whose operation depends upon an element that senses the Earth's magnetic field, e.g., an instrument having a magnetic needle that turns freely on a pivot in a horizontal plane and that always swings to such a position that one end points to magnetic north.
GS measuring instruments
. indicating instruments
. . compasses
. . . **magnetic compasses**
navigation aids
. navigation instruments
. . compasses
. . . **magnetic compasses**
RT gyrocompasses
solar compasses

magnetic compression
DEF The force exerted by a magnetic field on an electrically conducting fluid or on a plasma.
RT compressing
confinement
plasma control
plasmas (physics)

magnetic control
RT attitude control
∞ control

magnetic cooling
DEF Keeping a substance cooled to about 0.2 K by using a working substance (paramagnetic salt) in a cycle of processes between a high–temperature reservoir (liquid helium) at 1.2 K and a low temperature reservoir containing the substance to be cooled.
GS cooling
. **magnetic cooling**
RT absorption cooling
adiabatic demagnetization cooling
low temperature
low temperature environments
refrigerating

magnetic cores
GS cores

. magnetic cores
RT bubble memory devices
electric coils
ferrites
ferromagnetism
laminates
magnet coils
magnets
parametrons
saturable reactors
toroids
transformers

magnetic diffusion
SN (DIFFUSION VIA A MAGNETIC FIELD)
GS diffusion
. **magnetic diffusion**
RT field strength

magnetic dipoles
RT∞ dipoles
electric dipoles
∞ physical properties
∞ poles

magnetic disks
GS computer components
. computer storage devices
. . **magnetic disks**
magnetic storage
. **magnetic disks**
RT core storage
disk operating system (DOS)
∞ disks
memory (computers)
peripheral equipment (computers)
video disks

magnetic dispersion
RT∞ dispersion
electromagnetic scattering
ferromagnetism
magnetization
wave scattering

magnetic disturbances
GS **magnetic disturbances**
. magnetic storms
. . polar substorms
RT auroras
Birkeland currents
∞ disturbances
geomagnetism
KP index
nonadiabatic theory
solar activity
solar activity effects
solar flares
solar planetary interactions
solar terrestrial interactions
solar wind velocity
starspots
stellar activity
sudden ionospheric disturbances
sudden storm commencements
sunspots

magnetic domains
DEF Small areas on the surface of the body of thin films of a magnetic medium, each of which maintains a descrete magnetic field orientation relative to the others around it.
GS domains
. **magnetic domains**
RT bubble memory devices
bubble technique
dipole moments
domain wall
lines of force

magnetic drums
DEF Memory devices used in computers; rotating cylinders on which information may be stored as magnetically polarized areas, usually along several parallel tracks around the periphery.
GS computer components
. computer storage devices
. . **magnetic drums**
magnetic storage
. **magnetic drums**
RT core storage
∞ drums

magnetic effects
UF *geomagnetic effects*
GS magnetic properties
. **magnetic effects**
. . magnetic rigidity
RT∞ effects
flux transfer events
geomagnetism
magnetoactivity
plasma compression
temperature effects

magnetic energy storage
GS energy storage
. **magnetic energy storage**
RT energy technology
magnet coils
magnetic fields
superconducting magnets

magnetic equator
DEF That line on the surface of the Earth connecting all points at which the magnetic dip is zero. Used for geomagnetic equator.
UF *geomagnetic equator*
GS equators
. **magnetic equator**
RT geomagnetism
∞ inclination

magnetic field configurations
GS **magnetic field configurations**
. magnetic islands
RT astrophysics
divertors (fusion reactors)
electromagnetic fields
flux transfer events
force–free magnetic fields
helical windings
magnetic clouds
magnetic field reconnection
plasma compression
plasma control
plasma physics
polar cusps
poloidal flux
spheromaks
stellar magnetic fields

magnetic field intensity
USE **magnetic flux**

magnetic field inversions
GS inversions
. **magnetic field inversions**
RT electromagnetic fields
electromagnetism
electromechanics
field theory (physics)

magnetic field reconnection
DEF A change in topology of the magnetic field configuration resulting from a localized breakdown of the requirement for 'connection' of fluid elements at one time on a common magnetic field line. Alternatively, it occurs when an electric field exists with a component parallel to a locally two–dimensional X–type magnetic neutral line which is equivalent to a breakdown in connection.
GS magnetic properties
. magnetoactivity
. . **magnetic field reconnection**
RT field aligned currents
flux transfer events
interplanetary magnetic fields
magnetic field configurations
magnetic fields
magnetic flux
magnetic islands
magnetosphere–ionosphere coupling
solar magnetic field
space plasmas

magnetic fields
DEF Regions of space wherein magnetic dipoles would experience a magnetic force or torque; often represented as the geometric array of the imaginary magnetic lines of force that exist in relation to magnetic poles. Magnetic fields are also considered to be the regions of influence of magnetized bodies or electric currents.
GS **magnetic fields**
. biomagnetism
. force–free magnetic fields
. geomagnetism
. interplanetary magnetic fields
. interstellar magnetic fields
. lunar magnetic fields
. magnetic clouds
. magnetostatic fields
. nonuniform magnetic fields
. paleomagnetism
. planetary magnetic fields
. stellar magnetic fields
. . solar magnetic field
. trapped magnetic fields
RT Bernstein energy principle
beta factor
conjugate points
constitutive equations
crossed fields
demagnetization
Earth magnetosphere
electric fields
electromagnetic acceleration
electromagnetic fields
electromagnetism
electromechanics
electron–hole drops
ferromagnetic resonance
field emission
field strength
field theory (physics)
∞ fields
flux pumps
flux transfer events
geomagnetic tail
Helios satellites
Intasat satellite
∞ Kerr effects
lines of force
Lorentz force
magnetic energy storage
magnetic field reconnection
magnetization
magnetoactivity
magneto–optics
magnetoplasmadynamics
magnetoresistivity
magnetostatics

magnets
multipolar fields
nonthermal radiation
particle acceleration
pinch effect
polar cusps
polarity
pulsar magnetospheres
racetracks (particle accelerators)
radiation belts
screw pinch
Scylla
self consistent fields
square wells
stellar magnetospheres
Suhl effect
Zeeman effect

magnetic films
GS coatings
. **magnetic films**
RT ∞ films

magnetic flux
DEF The magnetic force exerted on an imaginary unit magnetic pole placed at any specified point of space. It is a vector quantity. Its direction is taken as the direction toward which a north magnetic pole would tend to move under the influence of the field. If the force is measured in dynes and the unit pole is a cgs unit pole, the field intensity is given in oersteds. Used for magnetic field intensity.
UF *magnetic field intensity*
GS field strength
. **magnetic flux**
rates (per time)
. flux (rate)
. . **magnetic flux**
RT beta factor
constitutive equations
current sheets
flux pinning
flux quantization
flux transfer events
force-free magnetic fields
lines of force
magnetic field reconnection
pinning

magnetic forming
GS forming techniques
. **magnetic forming**
metal working
. **magnetic forming**
RT bulging
cold working
deep drawing
electromagnetic hammers
metal drawing

magnetic induction
UF *electromagnetic deduction*
GS magnetic properties
. **magnetic induction**
RT coupling coefficients
flux (rate)
inductance
∞ induction
induction heating

magnetic induction probes
USE **magnetic probes**

magnetic islands
(added October 1994)
GS magnetic field configurations
. **magnetic islands**
RT coalescing
collisionless plasmas
current sheets
geomagnetic tail
magnetic field reconnection

magnetic lenses
UF *quadrupole lenses*
GS lenses
. **magnetic lenses**
RT cathode ray tubes
electron beams
electron guns
electron microscopes
electron microscopy
plasma guns
plasma jets
scanning electron microscopy
transmission electron microscopy
wire grid lenses

magnetic levitation vehicles
GS surface vehicles
. **magnetic levitation vehicles**
RT levitation
lift devices
mass drivers
rail transportation
suspension systems (vehicles)
∞ vehicles

magnetic materials
UF *magnetic metals*
GS **magnetic materials**
. ferrimagnetic materials
. ferromagnetic materials
. . ferrofluids
. . ferromagnetic films
. . magnetite
. . Permalloys (trademark)
RT Kondo effect
magnets
∞ materials
permanent magnets

magnetic measurement
SN (MEASUREMENT OF MAGNETIC PROPERTIES, QUANTITIES OR CONDITIONS)
UF *fluxmeters*
magnetometry
RT electromagnetic measurement
magnetometers
∞ materials tests
∞ measurement
squid (detectors)

magnetic memories
USE **magnetic storage**

magnetic metals
USE **magnetic materials**
metals

magnetic mirrors
DEF Magnetic fields so arranged that they will theoretically confine a hot plasma.
GS mirrors
. **magnetic mirrors**
. . tandem mirrors
RT lines of force
mirror fusion
mirror point
nonuniform magnetic fields
nuclear fusion
plasma control
plasma equilibrium
Q devices
Scylla
spheromaks

magnetic moments
DEF The quantities obtained by multiplying the distances between two magnetic poles by the average strength of the poles. Measures of the magnetic flux set up by the gyration of an electric field in a magnetic field. Moments are negative, indicating they are diagramatic, and equal to the energy of rotation divided by the magnetic field. In atomic and nuclear physics, moments, measured in Bohr magnetrons, are associated with the inirinsic spin of the particle and with the orbital motion of the particle in a system.
GS magnetic properties
. **magnetic moments**
moments
. dipole moments
. . **magnetic moments**
RT Bohr magneton
electric moments
Langevin formula
quenching (atomic physics)

magnetic monopoles
GS monopoles
. **magnetic monopoles**
particles
. elementary particles
. . **magnetic monopoles**
RT quantum theory

magnetic permeability
UF *magnetic susceptibility*
susceptibility (magnetism)
GS magnetic properties
. **magnetic permeability**
RT Curie-Weiss law
dielectric permeability
hysteresis
neel temperature
reluctance

magnetic pistons
GS pistons
. **magnetic pistons**
RT hypersonic wind tunnels
hypervelocity wind tunnels
shock tubes
shock wave generators

magnetic poles
DEF Either of the two places on the surface of the Earth where the magnetic dip is 90 deg., that in the Northern Hemisphere (at, approximately, latitude 73 deg. 8 N, longitude 101 deg. W in 1955) being designated north magnetic pole, and that in the Southern Hemisphere (at, approximately, latitude, 68 deg. S, longitude 144 deg. E in 1955) being designated south magnetic pole. Either of those two points of a magnet where the magnetic force is the greatest. In magnetic theory, a fictitious entity analogous to a unit charge of electrostatic theory. In nature, only dipoles, not isolate magnetic poles exist.
RT auroral zones
∞ dipoles
geomagnetism
polarity
∞ poles

magnetic probes
UF *magnetic induction probes*
GS measuring instruments
. **magnetic probes**
RT magnetometers
resonance probes

space probes

magnetic properties
GS **magnetic properties**
. antiferromagnetism
. biomagnetism
. Curie temperature
. diamagnetism
. ferrimagnetism
. ferromagnetism
. geomagnetism
. gyromagnetism
. . gyrofrequency
. magnetic effects
. . magnetic rigidity
. magnetic induction
. magnetic moments
. magnetic permeability
. magnetic relaxation
. . spin-lattice relaxation
. magnetic suspension
. magnetoacoustics
. magnetoactivity
. . flux transfer events
. . magnetic field reconnection
. . magnetoresistivity
. magnetostriction
. paleomagnetism
. paramagnetism
. polarization characteristics
. reluctance
. remanence
. thermomagnetic effects
RT coercivity
Curie-Weiss law
dipole moments
eddy currents
electrical properties
electromagnetic properties
electromagnetism
ferritic stainless steels
field strength
hysteresis
inductance
KP index
lines of force
magnetization
magnetomechanics (physics)
magnets
Maxwell equation
∞ physical properties
polarization (spin alignment)
∞ properties
∞ solid state physics
spin glass

magnetic pumping
RT electron cyclotron heating
induction heating
ion cyclotron radiation
kinetic heating
plasma heating
∞ pumping

magnetic recording
UF *magnetic tape recorders*
GS recording
. **magnetic recording**
RT bubble memory devices
data recording
recording heads

magnetic relaxation
GS magnetic properties
. **magnetic relaxation**
. . spin-lattice relaxation
RT relaxation (mechanics)

magnetic resonance
GS resonance
. **magnetic resonance**
. . ferromagnetic resonance
. . nuclear magnetic resonance
. . . proton magnetic resonance
. . . proton resonance
. . paramagnetic resonance
. . . electron paramagnetic resonance
RT nuclear spin
Overhauser effect
spectrum analysis

magnetic rigidity
UF *gyrointeraction*
GS magnetic properties
. magnetic effects
. . **magnetic rigidity**
RT electron trajectories
ionospheric drift
particle mass
particle motion
∞ rigidity

magnetic sails
(added May 1995)
DEF Devices that provide low thrust spacecraft propulsion by deflecting plasma winds with a superconducting cable-generated magnetic field.
UF *field sails*
magsails
GS propulsion
. electric propulsion
. . electromagnetic propulsion
. . . **magnetic sails**
. low thrust propulsion
. . electromagnetic propulsion
. . . **magnetic sails**
. spacecraft propulsion
. . electromagnetic propulsion
. . . **magnetic sails**
sails
. **magnetic sails**
RT interplanetary flight
interstellar travel
ion propulsion
manned Mars missions
particle beams
plasma propulsion
solar wind

magnetic shielding
GS shielding
. **magnetic shielding**
RT electromagnetic shielding
magnetometers
radiation shielding

magnetic signals
RT nuclear magnetic resonance
signal mixing
∞ signals

magnetic signatures
UF *magnetograms*
GS signatures
. **magnetic signatures**
RT pattern registration

magnetic spectroscopy
GS spectroscopy
. **magnetic spectroscopy**
RT gas spectroscopy
mass spectroscopy
spectroscopic analysis
vacuum spectroscopy

magnetic stars
GS celestial bodies
. stars
. . **magnetic stars**
RT peculiar stars

magnetic storage
DEF In computer terminology, any device which makes use of the magnetic properties of materials for the storage of information. Used for magnetic memories.
UF *magnetic memories*
GS **magnetic storage**
. bubble memory devices
. core storage
. magnetic disks
. magnetic drums
RT computer storage devices
data recording
data storage
∞ drums
parametrons
∞ storage
virtual memory systems

magnetic storms
DEF Worldwide disturbances of the Earth's magnetic field. Used for geomagnetic storms and magnetic substorms.
UF *geomagnetic storms*
magnetic substorms
GS magnetic disturbances
. **magnetic storms**
. . polar substorms
storms
. **magnetic storms**
. . polar substorms
RT Birkeland currents
dawn chorus
Forbush decreases
noise storms
solar storms
solar terrestrial interactions
spread F
sudden ionospheric disturbances
sudden storm commencements

magnetic substorms
USE **magnetic storms**

magnetic surveys
UF *magnetotelluric profiling*
RT aeromagnetism
geomagnetism

magnetic susceptibility
USE **magnetic permeability**

magnetic suspension
GS magnetic properties
. **magnetic suspension**
suspending (hanging)
. **magnetic suspension**
RT annular suspension and pointing system
levitation melting
magnetic bearings

magnetic switching
GS switching
. **magnetic switching**
RT antiferromagnetism
beam switching
bubble memory devices
saturable reactors

magnetic tape recorders
USE **magnetic recording**
tape recorders

magnetic tape transports
GS mechanical drives
. **magnetic tape transports**
RT tape recorders

magnetic tapes
DEF Ribbons of paper, metal, or plastic, coated or impregnated with magnetic material on which information may be stored in the form of magnetically polarized areas.
GS **magnetic tapes**
. computer compatible tapes
RT audio tapes
peripheral equipment (computers)
plastic tapes
playbacks
punched tapes
readers
recording heads
reels
tape recorders
∞ tapes
video tapes

magnetic transducers
GS transducers
. **magnetic transducers**
RT electromagnetic measurement
electronic transducers
microphones

magnetic variations
DEF Changes in magnetic fields in time or space.
GS variations
. **magnetic variations**
. . geomagnetic pulsations
. . . geomagnetic micropulsations
. . nocturnal variations
RT aeromagnetism
annual variations
diurnal variations
ionospheric disturbances
KP index
Scylla
traveling ionospheric disturbances

magnetically trapped particles
GS particles
. charged particles
. . **magnetically trapped particles**
. . . radiation belts
. . . . artificial radiation belts
. . . . inner radiation belt
. . . . outer radiation belt
. . . . proton belts
. trapped particles
. . **magnetically trapped particles**
. . . radiation belts
. . . . artificial radiation belts
. . . . inner radiation belt
. . . . outer radiation belt
. . . . proton belts
RT plasma control
trapped magnetic fields

magnetite
GS chalcogenides
. oxides
. . metal oxides
. . . iron oxides
. . . . **magnetite**
iron compounds
. iron oxides
. . **magnetite**
magnetic materials
. ferromagnetic materials
. . **magnetite**
minerals
. **magnetite**

magnetization
UF *remagnetization*
RT coercivity
magnetic dispersion
magnetic fields
magnetic properties
magnetomechanics (physics)
magnets
magnons
∞ polarization
polarization (charge separation)
polarization (spin alignment)

magneto–optics
RT acousto–optics
electromagnetic radiation
electro–optics
Faraday effect
Kerr magnetooptical effect
light modulators
magnetic fields
optical switching
∞ optics
polarization (waves)
polarized electromagnetic radiation

magnetoacoustic waves
GS elastic waves
. magnetoelastic waves
. . **magnetoacoustic waves**
RT magnetohydrodynamic waves
plasma waves

magnetoacoustics
GS acoustics
. **magnetoacoustics**
magnetic properties
. **magnetoacoustics**

magnetoactivity
GS magnetic properties
. **magnetoactivity**
. . flux transfer events
. . magnetic field reconnection
. . magnetoresistivity
RT magnetic effects
magnetic fields

magnetocardiography
GS bioengineering
. biometrics
. cardiography
. . . **magnetocardiography**
RT bioinstrumentation

magnetoelastic vibrations
USE **magnetoelastic waves**

magnetoelastic waves
UF *magnetoelastic vibrations*
GS elastic waves
. **magnetoelastic waves**
. . magnetoacoustic waves
RT electrostatic waves
magnetosonic resonance
magnetospheric instability
magnetostriction
plasma waves
sound waves
ultrasonic radiation

magnetoelasticity
USE **magnetostriction**

magnetoelectric media
RT dielectrics
magnetoionics
Maxwell equation
mechanical drives

magnetogasdynamics
USE **magnetohydrodynamics**

magnetograms
USE **magnetic signatures**

magnetohydrodynamic acceleration
USE **plasma acceleration**

magnetohydrodynamic flow
UF *hydromagnetic flow*
plasma flow
GS fluid flow
. **magnetohydrodynamic flow**
RT compressible flow
core flow
gas flow
geomagnetic hollow
Hartmann flow
Kelvin–Helmholtz instability
line current
magnetohydrodynamics
plasma flux measurement
plasma turbulence
plasmas (physics)
reverse field pinch
screw pinch
solar wind velocity
transverse waves
two fluid models

magnetohydrodynamic generators
GS electric generators
. direct power generators
. . **magnetohydrodynamic generators**
RT fuel cells
∞ generators
magnetohydrodynamics
plasma accelerators
plasma generators
thermionic converters
thermoelectric generators

magnetohydrodynamic shear heating
GS heating
. **magnetohydrodynamic shear heating**
RT plasma heating
plasma sheaths
shock heating
viscous flow

magnetohydrodynamic stability
UF *hydromagnetic stability*
plasma instability
plasma stability
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . flow stability
. . . . **magnetohydrodynamic stability**
. . . . . Weibel instability
. flow characteristics
. . flow stability
. . . **magnetohydrodynamic stability**
. . . . Weibel instability
stability
. dynamic stability
. . motion stability

. . . flow stability
. . . . **magnetohydrodynamic stability**
. . . . . Weibel instability
RT ballooning modes
beta factor
elastic waves
elliptical plasmas
force-free magnetic fields
helical flow
Kelvin-Helmholtz instability
Langmuir turbulence
magnetohydrodynamics
magnetohydrostatics
nonequilibrium plasmas
nonuniform plasmas
plasma conductivity
plasma cooling
plasma decay
plasma drift
plasma equilibrium
plasma lifetime
plasma loss
plasma pinch
plasma potentials
plasma slabs
plasma temperature
plasma turbulence
plasmas (physics)
plasmons
space plasmas
strongly coupled plasmas
thermal instability
zeta pinch

magnetohydrodynamic turbulence
GS turbulence
. **magnetohydrodynamic turbulence**
. . plasma turbulence
. . . Langmuir turbulence
RT homogeneous turbulence
isotropic turbulence

magnetohydrodynamic waves
DEF Low frequency waves in an electrically highly conducting fluid (such as a plasma) permeated by static magnetic fields. The restoring forces of the waves are, in general, the combination of a magnetic tensile stress along the magnetic field lines and the comprehensive stress between the field lines and the fluid pressure. Used for Alfven waves, hydromagnetic waves, and plasma sound waves.
UF *Alfven waves*
hydromagnetic waves
plasma sound waves
GS elastic waves
. **magnetohydrodynamic waves**
. . plasma waves
. . . electrostatic waves
RT magnetoacoustic waves
magnetohydrodynamics
normal shock waves
oblique shock waves
shock waves
wave-particle interactions

magnetohydrodynamics
DEF The study of the interaction that exists between a magnetic field and an electrically conducting fluid. Used for geometrical hydromagnetics, hydromagnetics, hydromagnetism, and magnetogasdynamics.
UF *geometrical hydromagnetics*
hydromagnetics
hydromagnetism
magnetogasdynamics
GS fluid mechanics
. fluid dynamics
. . hydrodynamics
. . . **magnetohydrodynamics**
. hydromechanics
. . hydrodynamics
. . . **magnetohydrodynamics**
RT alpha plasma devices
conducting fluids
∞ dynamics
electric arcs
electrohydrodynamics
gas dynamics
gas transport
Hall accelerators
Hall effect
Hartmann flow
Hartmann number
ionization
magnetohydrodynamic flow
magnetohydrudynamic generators
magnetohydrodynamic stability
magnetohydrodynamic waves
magnetohydrostatics
magnetoionics
magnetosonic resonance
pinch effect
plasma currents
plasma dynamics
plasma physics
plasma propulsion
plasmas (physics)
space charge
space mechanics
space plasmas
stellar activity
stellarators
thermonuclear reactions
uranium plasmas
wave-particle interactions

magnetohydrostatics
GS fluid mechanics
. hydromechanics
. . hydrostatics
. . . **magnetohydrostatics**
statics
. hydrostatics
. . **magnetohydrostatics**
RT magnetohydrodynamic stability
magnetohydrodynamics
magnetoionics
plasma physics
static stability

magnetoionic plasma
USE **plasmas (physics)**

magnetoionics
RT electromagnetic wave transmission
elliptical polarization
geomagnetism
gyrofrequency
ionospheric propagation
magnetoelectric media
magnetohydrodynamics
magnetohydrostatics
plasmas (physics)
radio transmission

magnetomechanics (physics)
DEF Study of the effects which the magnetization of a material and its strain have on each other.
RT magnetic properties
magnetization
∞ physics

magnetometers
DEF Instruments used in the study of geomagnetism for measuring a magnetic element. Used for Gaussmeters.
UF *Gaussmeters*
GS measuring instruments
. **magnetometers**
. . variometers
RT electrical measurement
field intensity meters
geomagnetism
∞ gradiometers
magnetic measurement
magnetic probes
magnetic shielding
MagSat 1 satellite
Magsat A satellite
MagSat B satellite
MagSat satellites
nuclear magnetic resonance
proton masers

magnetometry
USE **magnetic measurement**

magnetopause
GS environments
. Earth magnetosphere
. . **magnetopause**
RT Chapman-Ferraro problem
flux transfer events
magnetosheath
magnetospheric instability
planetary magnetotails
polar cusps
satellite atmospheres
solar wind

magnetoplasmadynamics
DEF The study of the dynamics of generating electricity by passing a beam of ionized gas through a magnetic field.
RT magnetic fields
plasma density
plasma propulsion
rocket engines
spacecraft propulsion

magnetoplasmas
USE **plasmas (physics)**

magnetoresistivity
GS electrical properties
. electrical resistivity
. . **magnetoresistivity**
electromagnetic properties
. **magnetoresistivity**
magnetic properties
. magnetoactivity
. . **magnetoresistivity**
transport properties
. electrical resistivity
. . **magnetoresistivity**
RT ∞ conductivity
electromagnetism
Fermi surfaces
magnetic fields
reluctance
∞ resistance

magnetosheath
GS environments
. Earth magnetosphere
. . **magnetosheath**
RT bow waves
Earth environment
geomagnetism
magnetopause

plasma sheaths
shock fronts
solar planetary interactions
solar terrestrial interactions
solar wind

magnetosonic resonance
GS resonance
. **magnetosonic resonance**
RT magnetoelastic waves
magnetohydrodynamics

magnetosphere–ionosphere coupling
UF *ionosphere–magnetosphere coupling*
GS coupling
. **magnetosphere–ionosphere coupling**
RT aeronomy
atmospheric physics
coupled modes
Earth ionosphere
Earth magnetosphere
electromagnetic coupling
flux transfer events
∞ ionospheres
magnetic field reconnection
magnetospheric instability
planetary ionospheres

∞ **magnetospheres**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Region surrounding a celestial body where its magnetic field controls the motions of charged particles.
RT cometary magnetospheres
Earth magnetosphere
planetary magnetospheres
pulsar magnetospheres
stellar magnetospheres

magnetospheric electron density
GS density (number/volume)
. particle density (concentration)
. . electron density (concentration)
. . . **magnetospheric electron density**
RT atmospheric density
ionospheric electron density
plasma density

magnetospheric instability
GS stability
. **magnetospheric instability**
RT geomagnetic pulsations
magnetoelastic waves
magnetopause
magnetosphere–ionosphere coupling

magnetospheric ion density
GS density (number/volume)
. particle density (concentration)
. . ion density (concentration)
. . . **magnetospheric ion density**
. . . . magnetospheric proton density
RT atmospheric density
ionospheric ion density
plasma density
positive ions

magnetospheric proton density
GS density (number/volume)
. particle density (concentration)
. . ion density (concentration)
. . . magnetospheric ion density
. . . . **magnetospheric proton density**
. . . proton density (concentration)
. . . . **magnetospheric proton density**
RT atmospheric density
plasma density

magnetostatic amplifiers
GS amplifiers
. **magnetostatic amplifiers**
RT gadolinium–gallium garnet
magnetic amplifiers
parametric amplifiers
traveling wave tubes
yttrium–aluminum garnet
yttrium–iron garnet

magnetostatic fields
GS magnetic fields
. **magnetostatic fields**
RT field theory (physics)
lines of force

magnetostatics
GS electromagnetism
. **magnetostatics**
RT electrostatics
flux (rate)
magnetic fields

magnetostriction
DEF The phenomenon wherein ferromagnetic materials experience an elastic strain when subjected to an external magnetic field. The converse in which mechanical stresses cause a change in the magnetic induction of a ferromagnetic material. Used for magnetoelasticity.
UF *magnetoelasticity*
GS magnetic properties
. **magnetostriction**
mechanical properties
. elastic properties
. . **magnetostriction**
RT electrostriction
magnetoelastic waves

∞ **magnetotails**
(added April 1990)
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED–CONSULT TERMS LISTED BELOW)
RT geomagnetic tail
planetary magnetotails

magnetotelluric profiling
USE **magnetic surveys**

magnetovariographs
USE **variometers**

magnetron sputtering
DEF A deposition method in which a microwave tube is utilized to confine a plasma magnetically to produce high deposition rates and a low working-gas partial pressure.
GS sputtering
. **magnetron sputtering**
RT deposition
metal coatings

magnetrons
DEF Electron tubes characterized by the interaction of electrons with the electric field of a circuit element in crossed steady electric and magnetic fields to produce alternating current power output.
GS electron tubes
. vacuum tubes
. . microwave tubes
. . . **magnetrons**
. . . . nigotrons
microwave equipment
. microwave oscillators
. . **magnetrons**
. . . nigotrons
. microwave tubes
. . **magnetrons**
. . . nigotrons
oscillators
. microwave oscillators
. . **magnetrons**
. . . nigotrons
RT cavity resonators
crossed field amplifiers
crossed fields
electrostatic generators
klystrons
multimode resonators
planotrons
resonators
traveling wave tubes

magnets
DEF Bodies which produce magnetic fields around themselves.
GS **magnets**
. cryogenic magnets
. electromagnets
. . high field magnets
. . superconducting magnets
. ferrimagnets
. permanent magnets
. wiggler magnets
RT electrets
ferromagnetic materials
ferromagnetism
magnet coils
magnetic cores
magnetic fields
magnetic materials
magnetic properties
magnetization
Permalloys (trademark)

magnification
DEF A ratio of the size of an image to its corresponding object. This is usually determined by linear measurement. Used for magnifiers.
UF *magnifiers*
RT amplification
increasing
lenses
∞ projection

magnifiers
USE **magnification**

magnitude
GS **magnitude**
. stellar magnitude
RT amplitudes
dimensions
displacement
∞ intensity
level (quantity)

magnons
UF *spin waves*
GS elementary excitations
. **magnons**
RT antiferromagnetism
ferrimagnetism
ferromagnetism
magnetization
plasmons

Magnus effect
RT Bernoulli theorem
boundary layer flow
∞ effects
fluid dynamics
fluid flow
missile design

rotating cylinders

magsails
USE **magnetic sails**

MagSat 1 satellite
DEF A scientific satellite launched by NASA for surveying the Earth's magnetic field. It was launched in October 1979 and reentered in June 1980.
GS artificial satellites
. scientific satellites
. . MagSat satellites
. . . **MagSat 1 satellite**
RT geomagnetism
magnetometers

Magsat A satellite
GS artificial satellites
. scientific satellites
. . MagSat satellites
. . . **Magsat A satellite**
RT geomagnetism
magnetometers

MagSat B satellite
DEF The second in a series of satellites for measuring the Earth's magnetic field. Similar magnetic measurements are proposed as part of the Geopotential Research Mission.
GS artificial satellites
. scientific satellites
. . MagSat satellites
. . . **MagSat B satellite**
RT geomagnetism
magnetometers

MagSat satellites
DEF A series of satellites used to study the magnetic field.
GS artificial satellites
. scientific satellites
. . **MagSat satellites**
. . . MagSat 1 satellite
. . . Magsat A satellite
. . . MagSat B satellite
RT geomagnetism
magnetometers

main sequence stars
GS celestial bodies
. **stars**
. . **main sequence stars**
. . . dwarf stars
. . . . dwarf novae
. . . . flare stars
. . . . red dwarf stars
. . . sun
RT color–magnitude diagram
early stars
F stars
G stars
giant stars
K stars
late stars
M stars
pre–main sequence stars
stellar evolution
stellar mass
subdwarf stars
subgiant stars

Maine
GS nations
. United States
. . **Maine**
RT St Lawrence Valley (North America)

maintainability
DEF A measure of the ease and rapidity with which a system or equipment can be retained in operational status through preventive maintenance or restored to operational status following a failure. It is characteristic of equipment design and installation, personnel availability in the required skill levels, adequacy of maintenance procedures and test equipment, and the physical environment under which maintenance is performed.
RT design analysis
maintenance
reliability

maintenance
UF *repairing*
troubleshooting
GS **maintenance**
. aircraft maintenance
. file maintenance (computers)
. space maintenance
. spacecraft maintenance
RT checkout
construction
damage assessment
downtime
equipment specifications
fault detection
∞ fixing
ground crews
ground support equipment
installing
logistics
logistics management
lubricants
lubrication
maintainability
manuals
mechanical engineering
operating costs
reliability
replacing
self repairing devices
service life
shipyards
shops
spare parts
specifications

maintenance training
GS education
. **maintenance training**

majority carriers
GS charge carriers
. **majority carriers**
RT additives
bipolar transistors
carrier injection
electron mobility
electrons
holes (electron deficiencies)
semiconductors (materials)

Malagasy Republic
USE **Madagascar**

Malawi
GS nations
. **Malawi**
RT Africa

Malaya
USE **Malaysia**

Malaysia
UF *Malaya*
GS nations
. **Malaysia**
RT Asia

Maldive Islands
GS landforms
. islands
. . **Maldive Islands**
nations
. **Maldive Islands**

maleates
GS esters
. **maleates**

males
RT children
females
human beings
sex
sex factor

malfunctions
DEF Improper functioning of components, causing improper operation of a system.
RT aborted missions
aircraft accidents
aircraft hazards
downtime
errors
failure
system failures

Mali
GS nations
. **Mali**
RT Africa

Malkus theory
RT statistical mechanics
∞ theories

malleability
GS mechanical properties
. **malleability**
RT ductility
metal working

malononitrile
GS cyanides
. **malononitrile**
nitriles
. **malononitrile**

Malta
GS landforms
. islands
. . **Malta**
nations
. **Malta**
RT Mediterranean Sea

mammals
GS animals
. vertebrates
. . **mammals**
. . . bats
. . . bears
. . . cats
. . . cattle
. . . . calves
. . . deer
. . . . caribous
. . . dogs
. . . goats
. . . horses
. . . marine mammals
. . . . dolphins
. . . . manatees
. . . . porpoises

. . . . seals (animals)
. . . . whales
. . . moles
. . . primates
. . . . apes
. . . . . chimpanzees
. . . . baboons
. . . . human beings
. . . . monkeys
. . . rodents
. . . . guinea pigs
. . . . hamsters
. . . . mice
. . . . . jerboas
. . . . . pocket mice
. . . . rabbits
. . . . rats
. . . . squirrels
. . . . . ground squirrels
. . . sheep
. . . swine
. . . wolves
RT Earth resources
homeotherms
mammary glands

mammary glands
GS anatomy
. glands (anatomy)
. . **mammary glands**
RT mammals

man
USE **human beings**

man environment interactions
RT climate change
desertification
environment effects
environment management
human beings
∞ interactions
International Geosphere–Biosphere program
resources

man machine systems
DEF Systems in which the functions of the man and the machine are interrelated and necessary for the operation of the system.
GS **man machine systems**
. human–computer interface
RT astronaut performance
∞ automation
balancing
bionics
biotechnology
computer systems design
consoles
cybernetics
data processing terminals
depersonalization
display devices
∞ engineering
human factors engineering
management
mechanization
office automation
pilot induced oscillation
pilot support systems
robotics
∞ systems
systems analysis
systems engineering
systems management
teleoperators
virtual reality
workstations

man operated propulsion systems
UF *MOPS (propulsion systems)*
GS propulsion
. low thrust propulsion
. . **man operated propulsion systems**
RT astronaut locomotion
compressed air
extravehicular activity
gaseous rocket propellants
manned space flight
pilot performance
retrorocket engines
∞ systems

man powered aircraft
DEF Aircraft powered by human energy.
RT ∞ aircraft
hang gliders
soaring
ultralight aircraft
∞ winged vehicles

man tended free flyers
(added July 1989)
DEF Intermittently manned spacecraft or platforms designed primarily to carry out experiments in reduced gravity and life science research. They also serve as annexes or components of space stations. Used for MTTF (space station).
UF *MTFF (space station)*
GS artificial satellites
. space stations
. . **man tended free flyers**
manned spacecraft
. **man tended free flyers**
space platforms
. **man tended free flyers**
stations
. space stations
. . **man tended free flyers**
RT Columbus space station
European space programs
orbital servicing
space station payloads
spaceborne experiments
spacecraft modules

man–computer interface
USE **human–computer interface**

management
UF *administration*
GS **management**
. configuration management
. contract management
. data management
. environment management
. financial management
. industrial management
. . engineering management
. . inventory management
. . . inventory controls
. . personnel management
. information management
. . information resources management
. . records management
. logistics management
. . inventory management
. . . inventory controls
. matrix management
. procurement management
. production management
. project management
. research management
. resources management
. . forest management
. . . reforestation
. . information resources management
. . land management
. safety management
. systems management
. terminal area energy management
. total quality management
. waste management
. water management
. weapon system management
. . waste disposal
. . . composting
. . . hazardous material disposal (in space)
. . waste treatment
. . . sewage treatment
. . waste utilization
RT autonomy
Central Electronic Management System
command and control
contract negotiation
cost analysis
cost estimates
cost incentives
cost reduction
cybernetics
decision making
decisions
∞ direction
economic analysis
economic factors
evaluation
fiduciaries
forecasting
GERT
incentive techniques
incentives
information flow
man machine systems
marketing
mission planning
operations research
performance prediction
personnel development
prejudices
problem solving
procurement policy
product development
production engineering
progress
project planning
∞ research projects
statistical analysis
systems engineering

management analysis
RT ∞ analyzing
cost analysis
GERT
PERT
tradeoffs

management information systems
GS information systems
. **management information systems**
management systems
. **management information systems**
RT computer techniques
data base management systems
data retrieval
data storage
data systems
information retrieval
information theory

records management
∞ systems

management methods
GS **management methods**
. Delphi method (forecasting)
. pattern method (forecasting)
. probe method (forecasting)
. profile method (forecasting)
RT computer techniques
cost reduction
critical path method
decision making
estimates
forecasting
GERT
incentives
matrix management
∞ methodology
multidisciplinary research
NASA Interactive Planning System
operations research
PERT
retraining
Starsite program
systems management
total quality management

management planning
GS planning
. **management planning**
. . production planning
. . project planning
RT consulting
cost analysis
cost reduction
decision making
∞ development
economy
estimates
feasibility analysis
finance
forecasting
GERT
human resources
interfaces
life cycle costs
mediation
mission planning
operations research
personnel management
PERT
program trend line analysis
project management
research and development
selective dissemination of information
systems engineering
tradeoffs
value engineering

management systems
GS **management systems**
. flight management systems
. management information systems
RT computer techniques
information systems
project management
∞ systems

manatees
DEF Large plant eating aquatic mammals living in shallow tropical waters near the coasts of North and South America.
GS animals
. vertebrates
. . mammals
. . . marine mammals
. . . . **manatees**

Mandelstam representation
GS models
. mathematical models
. . **Mandelstam representation**
RT elementary particle interactions
inelastic scattering
Lorentz transformations
nuclear scattering
quantum theory
scattering amplitude

mandrels
RT cores
machine tools
molds
shafts (machine elements)

maneuverability
RT air slew missiles
aircraft control
aircraft maneuvers
aircraft performance
controllability
flight characteristics
flight control
flight envelopes
helicopter performance
maneuvers
spacecraft maneuvers

maneuverable reentry bodies
DEF (1) Reentry vehicles capable of performing preplanned flight maneuvers during the reentry phase. (2) Ballistic missil reentry vehicles whose ballistic trajectory can be adjusted by internal or external mechanisms, enabling them to evade antiballistic defenses and.or strike their target with a high degree of accuracy.
GS reentry vehicles
. **maneuverable reentry bodies**
. . lifting reentry vehicles
. . . FDL-5 reentry vehicle
. . . HL-10 reentry vehicle
. . . HLD-35 reentry vehicle
. . . Janus spacecraft
. . . M-2 lifting body
. . . . M-2F2 lifting body
. . . X-20 aircraft
. . . X-24 aircraft
RT ∞ bodies

maneuverable spacecraft
GS **maneuverable spacecraft**
. aerospace planes
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . X-30 vehicle
. Apollo spacecraft
. . Apollo lunar experiment module
. Astro vehicle
. evasive satellites
. ferry spacecraft
. Janus spacecraft
. rendezvous spacecraft
. X-20 aircraft
RT artificial satellites
interplanetary spacecraft
landing modules
lunar landing modules
lunar probes
lunar satellites
manned spacecraft
MARS (Manned Reusable Spacecraft)
recoverable spacecraft
reentry vehicles
space probes
∞ spacecraft
spacecraft maneuvers
thrust vector control

maneuvers
GS **maneuvers**
. aircraft maneuvers
. evasive actions
. hovering
. orbital rendezvous
. . Earth orbital rendezvous
. . lunar orbital rendezvous
. sideslip
. spacecraft docking
. spacecraft maneuvers
. . orbital maneuvers
. terrain following
RT aerobatics
aircraft spin
flight control
landing
maneuverability
minor circle turning flight
self maneuvering units
takeoff
turning flight

manganese
GS chemical elements
. **manganese**
. . manganese isotopes
metals
. transition metals
. . **manganese**
. . . manganese isotopes
RT strategic materials

manganese 53
USE **manganese isotopes**

manganese 54
USE **manganese isotopes**

manganese 56
USE **manganese isotopes**

manganese alloys
GS alloys
. **manganese alloys**
. . Manganin (trademark)

manganese compounds
GS **manganese compounds**
. manganese oxides
. . Hopcalite (trademark)
. manganese phosphides
. permanganates
RT ∞ chemical compounds
Group 7B compounds
∞ metal compounds

manganese ions
GS ions
. metal ions
. . **manganese ions**
RT permanganates

manganese isotopes
UF *manganese 53*
manganese 54
manganese 56
GS chemical elements
. manganese
. . **manganese isotopes**
. nuclides
. . isotopes
. . . **manganese isotopes**
metals

. transition metals
. . manganese
. . . **manganese isotopes**

manganese oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **manganese oxides**
. . . . Hopcalite (trademark)
manganese compounds
. **manganese oxides**
. . Hopcalite (trademark)

manganese phosphides
GS manganese compounds
. **manganese phosphides**
phosphorus compounds
. phosphides
. . **manganese phosphides**

Manganin (trademark)
GS alloys
. copper alloys
. . **Manganin (trademark)**
. manganese alloys
. . **Manganin (trademark)**
RT electrical resistance
thermocouples

manifolds
RT air intakes
exhaust systems
fuel systems
intake systems
pipes (tubes)
plenum chambers
∞ tubes
∞ water intakes

manifolds (mathematics)
GS **manifolds (mathematics)**
. Riemann manifold
RT coordinates
curves (geometry)
fibers (mathematics)
fixed points (mathematics)
topology

manipulation
USE **manipulators**

manipulators
SN (LIMITED TO MECHANICAL DEVICES FOR REMOTE HANDLING)
UF *manipulation*
GS **manipulators**
. remote manipulator system
RT control equipment
∞ effectors
end effectors
inverse kinematics
payload deployment & retrieval system
remote control
remote handling
robot arms
robot dynamics
robotics
servocontrol
shielding
tactile sensors (robotics)
teleoperators
telerobotics
torque sensors (robotics)

Manitoba
GS nations
. Canada
. . **Manitoba**

Manitou (CO)
GS cities
. **Manitou (CO)**
RT Colorado

Mann–Whitney–Wilcoxon U test
GS statistical analysis
. statistical tests
. . **Mann–Whitney–Wilcoxon U test**
RT quality control

Manned Aerodynamic Reusable Spaceship
USE **MARS (Manned Reusable Spacecraft)**

manned lunar surface vehicles
GS surface vehicles
. lunar surface vehicles
. . lunar roving vehicles
. . . **manned lunar surface vehicles**
. roving vehicles
. . lunar roving vehicles
. . . **manned lunar surface vehicles**
RT crawler tractors
lunar logistics
lunar mobile laboratories
∞ surfaces
∞ vehicles
walking machines

manned maneuvering units
SN (LIMITED TO ASTRONAUT PROPULSIVE UNITS OF THAT NAME DESIGNED FOR THE SPACE TRANSPORTATION SYSTEM AND THE SPACE STATION)
DEF A propulsive backpack device for extravehicular activity. It uses a low thrust, dry, cold nitrogen propellant.
GS astronaut maneuvering equipment
. **manned maneuvering units**
RT astronaut locomotion
extravehicular activity
life support systems
orbital servicing
self maneuvering units
space transportation system

manned Mars missions
DEF Any of several options for manned missions to Mars in which spacecraft are built for a particular mission. A mission is estimated by around 2020 and may last from one year to three years depending on speed and design.
GS space missions
. **manned Mars missions**
RT interplanetary flight
interplanetary spacecraft
long duration space flight
magnetic sails
manned spacecraft
Mars (planet)
Mars exploration
NASA space programs
return to Earth space flight
space exploration
terraforming

manned orbital laboratories
UF *MOL (orbital laboratories)*
MORL
GS laboratories
. space laboratories
. . **manned orbital laboratories**
. . . Skylab 1
. . . Skylab 2
. . . Skylab 3
. . . Skylab 4
. . . Spacelab
manned spacecraft
. **manned orbital laboratories**
. . Skylab 1
. . Skylab 2
. . Skylab 3
. . Skylab 4
. . Spacelab
RT Apollo spacecraft
Columbus space station
International Space Station
orbital workshops
reconnaissance spacecraft
space stations
∞ spacecraft
Titan 3 launch vehicle

manned orbital space stations
USE **space stations**

manned orbital telescopes
UF *MOT (orbital telescopes)*
GS telescopes
. **manned orbital telescopes**
. . Apollo telescope mount
RT OAO

manned reentry
GS atmospheric entry
. reentry
. . **manned reentry**
space flight
. manned space flight
. . **manned reentry**
RT descent trajectories
environmental control
lifting reentry vehicles
reentry communication
spacecraft reentry

manned space flight
GS space flight
. **manned space flight**
. . Apollo flights
. . . Apollo 5 flight
. . . Apollo 6 flight
. . . Apollo 7 flight
. . . Apollo 8 flight
. . . Apollo 9 flight
. . . Apollo 10 flight
. . . Apollo 11 flight
. . . Apollo 12 flight
. . . Apollo 13 flight
. . . Apollo 14 flight
. . . Apollo 15 flight
. . . Apollo 16 flight
. . . Apollo 17 flight
. . Gemini flights
. . . Gemini 3 flight
. . . Gemini 4 flight
. . . Gemini 5 flight
. . . Gemini 6 flight
. . . Gemini 7 flight
. . . Gemini 8 flight
. . . Gemini 9 flight
. . . Gemini 10 flight
. . . Gemini 11 flight
. . . Gemini 12 flight
. . manned reentry
. . Mercury flights
. . . Mercury MA-1 flight
. . . Mercury MA-2 flight
. . . Mercury MA-3 flight
. . . Mercury MA-4 flight
. . . Mercury MA-5 flight
. . . Mercury MA-6 flight
. . . Mercury MA-7 flight
. . . Mercury MA-8 flight
. . . Mercury MA-9 flight

. . . Mercury MR–1 flight
. . . Mercury MR–2 flight
. . . Mercury MR–3 flight
. . . Mercury MR–4 flight
. . Space Shuttle missions
. . . Space Shuttle mission 31–A
. . . Space Shuttle mission 31–B
. . . Space Shuttle mission 31–C
. . . Space Shuttle mission 31–D
. . . Space Shuttle mission 41–A
. . . Space Shuttle mission 41–B
. . . Space Shuttle mission 41–C
. . . Space Shuttle mission 41–D
. . . Space Shuttle mission 41–G
. . . Space Shuttle mission 51–A
. . . Space Shuttle mission 51–B
. . . Space Shuttle mission 51–C
. . . Space Shuttle mission 51–D
. . . Space Shuttle mission 51–E
. . . Space Shuttle mission 51–F
. . . Space Shuttle mission 51–G
. . . Space Shuttle mission 51–H
. . . Space Shuttle mission 51–I
. . . Space Shuttle mission 51–J
. . . Space Shuttle mission 51–L
. . . Space Shuttle mission 61–A
. . . Space Shuttle mission 61–B
. . . Space Shuttle mission 61–C
. . . Space Shuttle mission 61–E
RT aerospace environments
Apollo extension system
Atlantis (orbiter)
Columbia (Orbiter)
Discovery (Orbiter)
Enterprise (Orbiter)
extravehicular activity
Gemini 2 spacecraft
Gemini (GT–1) spacecraft
Gemini B spacecraft
Gemini spacecraft
human factors engineering
Indian space program
interplanetary flight
interstellar travel
intravehicular activity
long duration space flight
man operated propulsion systems
Mercury project
space adaptation syndrome
space communication
space exploration
space flight stress
space logistics
space programs
space psychology
Space Shuttle orbiters
space shuttles
spacecrew transfer
suborbital flight

manned space flight network
GS networks
. tracking networks
. . manned space flight network
RT Advanced Range Instrumentation Ship
unified S band

manned spacecraft
GS manned spacecraft
. aerospace planes
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . X–30 vehicle
. Apollo spacecraft
. . Apollo lunar experiment module
. Astro vehicle
. Columbus space station
. ferry spacecraft
. Gemini B spacecraft
. Gemini spacecraft
. . Gemini 2 spacecraft
. . Gemini (GT–1) spacecraft
. Janus spacecraft
. Lunar Module
. . Apollo lunar experiment module
. . LSSM
. . Lunar Module 5
. . Lunar Module 7
. man tended free flyers
. manned orbital laboratories
. . Skylab 1
. . Skylab 2
. . Skylab 3
. . Skylab 4
. . Spacelab
. MARS (Manned Reusable Spacecraft)
. Mercury spacecraft
. . Aurora 7
. . Faith 7
. . Friendship 7
. . SIGMA 7
. Mir space station
. . Kvant modules
. . Priroda module
. orbital workshops
. . Saturn workshops
. . . Saturn 1 workshop
. . . Saturn 5 workshop
. . Skylab 1
. . Skylab 2
. . Skylab 3
. . Skylab 4
. Salyut space station
. Soyuz spacecraft
. Space Operations Center (NASA)
. space shuttles
. . Buran space shuttle
. . Hermes manned spaceplane
. . Space Shuttle orbiters
. . . Atlantis (orbiter)
. . . Challenger (Orbiter)
. . . Columbia (Orbiter)
. . . Discovery (Orbiter)
. . . Endeavour (orbiter)
. . . Enterprise (Orbiter)
. voskhod manned spacecraft
. . Voskhod 1 spacecraft
. . Voskhod 2 spacecraft
. Vostok spacecraft
. . Vostok 1 spacecraft
. . Vostok 2 spacecraft
. . Vostok 3 spacecraft
. . Vostok 4 spacecraft
. . Vostok 5 spacecraft
. . Vostok 6 spacecraft
RT Apollo 7 flight
Apollo 8 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
Apollo project
Apollo Soyuz test project
approach and landing tests (STS)
artificial satellites
biosatellites
boostglide vehicles
command service modules
environmental control
gravity gradient satellites
interplanetary spacecraft
landing modules
lifting reentry vehicles
lunar landing modules
lunar satellites
lunar spacecraft
maneuverable spacecraft
manned Mars missions
Mercury flights
Mercury project
military spacecraft
reconnaissance spacecraft
recoverable spacecraft
rendezvous spacecraft
reusable spacecraft
Shuttle Derived Vehicles
space capsules
space navigation
Space Shuttle Boosters
space stations
∞ spacecraft
spacecraft cabin simulators
unmanned spacecraft
X–20 aircraft

Manning theory
RT fluid flow
∞ theories
wall flow

mannitol
GS organic compounds
. carbohydrates
. . sugars
. . . mannitol

manometers
DEF Instruments for measuring pressure of gases and vapors above and below atmospheric pressure. Used for micromanometers and U tubes.
UF *micromanometers*
U tubes
GS measuring instruments
. pressure gages
. . manometers
RT barometers
blood pressure
flame probes
pressure distribution
pressure measurement
vacuum gages

manpower
GS manpower
. engineers
. scientists
RT engineering management
human resources
labor
personnel
research management
resources
retraining

mantle (Earth structure)
USE Earth mantle

∞ **manual**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT manual control
manuals

manual control
GS manual control
. visual control
RT aircraft control

attitude control
automatic control
∞ buttons
consoles
∞ control
control boards
control equipment
control sticks
directional control
engine control
guidance (motion)
handles
helicopter control
human factors engineering
knobs
landing instruments
lateral control
levers
longitudinal control
∞ manual
pedals
reentry guidance
remote control
satellite control
satellite guidance
servocontrol
spacecraft control
spacecraft guidance
speed control
temperature control

manuals
GS documents
. manuals
. . installation manuals
. . user manuals (computer programs)
RT directories
handbooks
maintenance
∞ manual
textbooks

manufacturing
GS manufacturing
. computer aided manufacturing
. low gravity manufacturing
. space manufacturing
RT aircraft production costs
commerce
commodities
containerless melts
contract negotiation
economic development
fabrication
industries
Kraft process (woodpulp)
∞ processing
production management
products
space industrialization
technologies
technology assessment
technology utilization

manures
DEF Materials that fertilize land. Refuse of stables and barnyards consisting of mammal and bird excreta with or without litter.
GS wastes
. manures
RT biomass energy production
metabolic wastes
waste disposal
waste utilization

many body problem
UF *many particle theory*
N-body problem
RT BCS theory
celestial mechanics
elementary excitations
field theory (physics)
four body problem
Green's functions
Hartree approximation
orbital mechanics
orbits
particle theory
perturbation
perturbation theory
∞ problems
quantum statistics
statistical mechanics
superfluidity
three body problem
Trojan orbits
two body problem

many electron effects
RT autoionization
electron capture
electron scattering
electron states
electron transitions

many particle theory
USE **many body problem**

MAP (programming language)
GS languages
. programming languages
. . Assembly language
. . . **MAP (programming language)**
RT computer programming

map matching guidance
GS guidance (motion)
. map matching guidance
RT airborne equipment
display devices
image correlators
radar maps
radar navigation
TERCOM
terrain following
video landmark acquisition and tracking

mapping
SN (EXCLUDES CONFORMAL MAPPING)
UF *cartography*
flux mapping
GS mapping
. cadastral mapping
. computer aided mapping
. ice mapping
. photomapping
. planetary mapping
. soil mapping
. thematic mapping
. thermal mapping
RT astrography
Bonne projection
contours
declination
fixed points (mathematics)
functions (mathematics)
geographic applications program
geography
Heat Capacity Mapping Mission
hypsography
maps
Mapsat
orthophotography
Phoenix quadrangle (AZ)
photogrammetry
photography
scale (ratio)
SPOT (French satellite)
surveys
terrain analysis
topography
topology
triangulation

maps
GS maps
. astronomical maps
. . planispheres
. lunar maps
. meteorological charts
. photomaps
. radar clutter maps
. radar maps
. relief maps
RT Bonne projection
cadastral mapping
charts
computer aided mapping
coordinates
datum (elevation)
geography
∞ globes
hypsography
mapping
Mercator projection
navigation aids
photomapping
soil mapping
surveys
thematic mapping

Mapsat
DEF A proposed stereoscopic system for mapping the Earth from space to replace Landsat D as defined by the US Geological Survey.
GS artificial satellites
. Mapsat
RT Landsat satellites
mapping
remote sensing
stereophotography

maraging
GS hardening (materials)
. precipitation hardening
. . maraging
heat treatment
. maraging

maraging steels
GS alloys
. high strength alloys
. . high strength steels
. . . maraging steels
. iron alloys
. . steels
. . . high strength steels
. . . . maraging steels
RT martensitic stainless steels
stainless steels

Marangoni convection
DEF Convective flow induced by surface tension gradients. This is important in both ground and space processing where a free surface is present.
GS convection
. Marangoni convection
RT convective flow
free convection
interfacial tension
liquid bridges
low gravity manufacturing

melts (crystal growth)
microgravity
space processing

Marbore 2 engine
USE J-60-T-25 engine

Marecs maritime satellites
DEF The European Space Agency's system of two satellites provides maritime communications links between ships and coast Earth stations. Originally known as Marots, the system operates with one satellite over the Atlantic Ocean and one over the Pacific Ocean. It was leased to the International Maritime Satellite Organization for five years. Also known as the maritime European communications satellite.
GS artificial satellites
. communication satellites
. . Marecs maritime satellites
. ESA satellites
. . Marecs maritime satellites
. maritime satellites
. . Marecs maritime satellites
ESA spacecraft
. ESA satellites
. . Marecs maritime satellites
RT European space programs
satellite networks

margins
RT borders
edges
rims

maria
GS maria
. lunar maria
RT lava
meteorite craters
topography

marijuana
GS drugs
. psychotropic drugs
. . marijuana
RT alkaloids

marine biology
DEF The study of marine fauna and flora and related topics.
RT algae
aquatic plants
aquiculture
∞ biology
environment effects
environmental quality
fisheries
limnology
oceanography
phytoplankton
∞ science
sea grasses
seals (animals)
seaweeds
shellfish
thermal pollution
waterfowl
wetlands
zooplankton

marine chemistry
DEF The study of the chemical processes in oceanic environments.
GS environmental chemistry
. marine chemistry
RT biochemistry
∞ chemistry
geochemistry
hydrology
limnology
ocean bottom
∞ science
sediments

marine environments
GS environments
. marine environments
RT aquiculture
beaches
coastal ecology
coasts
environment effects
ice environments
nearshore water
ocean models
oceanography
red tide
sea breeze
shellfish
waterfowl
wetlands

marine mammals
GS animals
. vertebrates
. . mammals
. . . marine mammals
. . . . dolphins
. . . . manatees
. . . . porpoises
. . . . seals (animals)
. . . . whales

marine meteorology
GS meteorology
. hydrometeorology
. . marine meteorology
RT fronts (meteorology)
oceanography
∞ science
typhoons
wind (meteorology)

marine navigation
USE surface navigation

marine propulsion
GS propulsion
. marine propulsion
. . underwater propulsion
. . . submarine propulsion
RT chemical propulsion
electric propulsion
jet propulsion
nuclear electric propulsion
nuclear propulsion
propeller drive
Savannah nuclear ship

marine resources
GS resources
. Earth resources
. . marine resources
RT aquiculture
coastal ecology
fisheries
oceanography
oceans
sea water
shellfish
underwater resources
water pollution
wetlands

marine rudders
GS control surfaces
. rudders
. . marine rudders
RT aerial rudders
hydrofoils
tail assemblies

marine technology
GS technologies
. marine technology
RT aquiculture
artificial harbors
deepwater terminals
oceanography
offshore docking
offshore energy sources
offshore platforms
tanker terminals
wharves

marine transportation
GS transportation
. marine transportation
RT air transportation
deepwater terminals
harbors
offshore docking
rail transportation
ships
tanker ships
water vehicles

Mariner C spacecraft
GS interplanetary spacecraft
. Mariner spacecraft
. . Mariner C spacecraft
unmanned spacecraft
. space probes
. . Mariner spacecraft
. . . Mariner C spacecraft

Mariner Jupiter-Saturn flyby
GS space missions
. flyby missions
. . Grand Tours
. . . Mariner Jupiter-Saturn flyby
RT interplanetary flight
∞ missions
space flight

Mariner Jupiter-Uranus flyby
GS space missions
. flyby missions
. . Grand Tours
. . . Mariner Jupiter-Uranus flyby
RT interplanetary flight
∞ missions
space flight

Mariner Mark 2 Spacecraft
DEF A NASA concept of a basic planetary spacecraft for studying the outer planets, comets, and asteroids. The first of the series will be a comet rendezvous mission to be launched in 1994.
RT Cassini mission
Comet Rendezvous Asteroid Flyby Mission
flyby missions
interplanetary flight
∞ spacecraft

Mariner program
GS programs
. NASA programs
. . NASA space programs
. . . Mariner program

. . . . Mariner Venus–Mercury 1973
. . . . Mariner–Mercury 1973
. space programs
. . NASA space programs
. . . **Mariner program**
. . . . Mariner Venus–Mercury 1973
. . . . Mariner–Mercury 1973
RT Agena B rocket vehicle
Agena rocket vehicles
Atlas Agena launch vehicles
Atlas launch vehicles
Centaur project
flyby missions
Mars probes
space probes
unmanned spacecraft
Venus probes

Mariner space probes
GS interplanetary spacecraft
. **Mariner space probes**
. . Mariner 1 space probe
. . Mariner 2 space probe
. . Mariner 3 space probe
. . Mariner 4 space probe
. . Mariner 5 space probe
. . Mariner 6 space probe
. . Mariner 7 space probe
. . Mariner 8 space probe
. . Mariner 9 space probe
. . Mariner 10 space probe
. . Mariner 11 space probe
. . Mariner R 2 space probe
unmanned spacecraft
. space probes
. . **Mariner space probes**
. . . Mariner 1 space probe
. . . Mariner 2 space probe
. . . Mariner 3 space probe
. . . Mariner 4 space probe
. . . Mariner 5 space probe
. . . Mariner 6 space probe
. . . Mariner 7 space probe
. . . Mariner 8 space probe
. . . Mariner 9 space probe
. . . Mariner 10 space probe
. . . Mariner 11 space probe
. . . Mariner R 2 space probe

Mariner spacecraft
GS interplanetary spacecraft
. **Mariner spacecraft**
. . Mariner C spacecraft
. . Mariner Venus 67 spacecraft
unmanned spacecraft
. space probes
. . **Mariner spacecraft**
. . . Mariner C spacecraft
. . . Mariner Venus 67 spacecraft

Mariner Venus 67 spacecraft
GS interplanetary spacecraft
. Mariner spacecraft
. . **Mariner Venus 67 spacecraft**
unmanned spacecraft
. space probes
. . Mariner spacecraft
. . . **Mariner Venus 67 spacecraft**
RT Venus probes

Mariner Venus–Mercury 1973
GS programs
. NASA programs
. . NASA space programs
. . . Mariner program
. . . . **Mariner Venus–Mercury 1973**
. space programs
. . NASA space programs
. . . Mariner program
. . . . **Mariner Venus–Mercury 1973**
space missions
. flyby missions
. . **Mariner Venus–Mercury 1973**
RT Mariner 10 space probe
Mariner–Mercury 1973

Mariner 1 space probe
GS interplanetary spacecraft
. Mariner space probes
. . **Mariner 1 space probe**
. Venus probes
. . **Mariner 1 space probe**
unmanned spacecraft
. space probes
. . Mariner space probes
. . . **Mariner 1 space probe**
. . Venus probes
. . . **Mariner 1 space probe**

Mariner 2 space probe
GS interplanetary spacecraft
. Mariner space probes
. . **Mariner 2 space probe**
. Venus probes
. . **Mariner 2 space probe**
unmanned spacecraft
. space probes
. . Mariner space probes
. . . **Mariner 2 space probe**
. . Venus probes
. . . **Mariner 2 space probe**
RT Atlas Agena B launch vehicle

Mariner 3 space probe
GS interplanetary spacecraft
. Mariner space probes
. . **Mariner 3 space probe**
. Mars probes
. . **Mariner 3 space probe**
unmanned spacecraft
. space probes
. . Mariner space probes
. . . **Mariner 3 space probe**
. . Mars probes
. . . **Mariner 3 space probe**

Mariner 4 space probe
GS interplanetary spacecraft
. Mariner space probes
. . **Mariner 4 space probe**
. Mars probes
. . **Mariner 4 space probe**
unmanned spacecraft
. space probes
. . Mariner space probes
. . . **Mariner 4 space probe**
. . Mars probes
. . . **Mariner 4 space probe**

Mariner 5 space probe
GS interplanetary spacecraft
. Mariner space probes
. . **Mariner 5 space probe**
. Venus probes
. . **Mariner 5 space probe**
unmanned spacecraft
. space probes
. . Mariner space probes
. . . **Mariner 5 space probe**
. . Venus probes
. . . **Mariner 5 space probe**
RT Atlas Agena launch vehicles

Mariner 6 space probe
GS interplanetary spacecraft
. Mariner space probes
. . **Mariner 6 space probe**
. Mars probes
. . **Mariner 6 space probe**
unmanned spacecraft
. space probes
. . Mariner space probes
. . . **Mariner 6 space probe**
. . Mars probes
. . . **Mariner 6 space probe**
RT Atlas Agena launch vehicles
Mars 69 project

Mariner 7 space probe
GS interplanetary spacecraft
. Mariner space probes
. . **Mariner 7 space probe**
. Mars probes
. . **Mariner 7 space probe**
unmanned spacecraft
. space probes
. . Mariner space probes
. . . **Mariner 7 space probe**
. . Mars probes
. . . **Mariner 7 space probe**
RT Mars 69 project

Mariner 8 space probe
GS interplanetary spacecraft
. Mariner space probes
. . **Mariner 8 space probe**
. Mars probes
. . **Mariner 8 space probe**
unmanned spacecraft
. space probes
. . Mariner space probes
. . . **Mariner 8 space probe**
. . Mars probes
. . . **Mariner 8 space probe**
RT Mars 71 project

Mariner 9 space probe
GS interplanetary spacecraft
. Mariner space probes
. . **Mariner 9 space probe**
. Mars probes
. . **Mariner 9 space probe**
unmanned spacecraft
. space probes
. . Mariner space probes
. . . **Mariner 9 space probe**
. . Mars probes
. . . **Mariner 9 space probe**

Mariner R 2 space probe
GS interplanetary spacecraft
. Mariner space probes
. . **Mariner R 2 space probe**
unmanned spacecraft
. space probes
. . Mariner space probes
. . . **Mariner R 2 space probe**

Mariner 10 space probe
GS interplanetary spacecraft
. Mariner space probes
. . **Mariner 10 space probe**
. Venus probes
. . **Mariner 10 space probe**
unmanned spacecraft
. space probes
. . Mariner space probes
. . . **Mariner 10 space probe**
. . Venus probes
. . . **Mariner 10 space probe**
RT Mariner Venus–Mercury 1973
Mariner–Mercury 1973

Mariner 11 space probe
GS interplanetary spacecraft
. Mariner space probes
. . Mariner 11 space probe
unmanned spacecraft
. space probes
. . Mariner space probes
. . . Mariner 11 space probe

Mariner–Mercury 1973
GS programs
. NASA programs
. . NASA space programs
. . . Mariner program
. . . . Mariner–Mercury 1973
. space programs
. . NASA space programs
. . . Mariner program
. . . . Mariner–Mercury 1973
space missions
. flyby missions
. . Mariner–Mercury 1973
RT Mariner 10 space probe
Mariner Venus–Mercury 1973

Marisat 1 satellite
DEF The first commercial maritime communication satellite.
GS artificial satellites
. Marisat satellites
. . Marisat 1 satellite
RT radio communication

Marisat satellites
DEF A class of maritime commercial communication service satellites designed to provide telephone, telegraph, radio, distress messages and facsimile services to merchant ships, etc.
GS artificial satellites
. Marisat satellites
. . Marisat 1 satellite
RT communication
Fleet Satellite Communication System
INMARSAT satellites
Marots (ESA)
radio communication

Maritime Communication Satellite (ESA)
USE Marots (ESA)

Maritime Orbital Test Satellite
USE Marots (ESA)

maritime satellites
GS artificial satellites
. maritime satellites
. . ERS-1 (ESA satellite)
. . Marecs maritime satellites
. . Marots (ESA)
RT MSAT
National Oceanic Satellite System
TOPEX

Mark 1 spacecraft
RT∞ spacecraft

Mark 1 reentry body
GS reentry vehicles
. Mark 1 reentry body
RT intercontinental ballistic missiles
intermediate range ballistic missiles

Mark 2 reentry body
GS reentry vehicles
. Mark 2 reentry body
RT intercontinental ballistic missiles
intermediate range ballistic missiles

Mark 3 reentry body
GS reentry vehicles
. Mark 3 reentry body
RT intercontinental ballistic missiles
intermediate range ballistic missiles

Mark 4 reentry body
GS reentry vehicles
. Mark 4 reentry body
RT intercontinental ballistic missiles

Mark 5 reentry body
GS reentry vehicles
. Mark 5 reentry body
RT intercontinental ballistic missiles

Mark 6 reentry body
GS reentry vehicles
. Mark 6 reentry body
RT intercontinental ballistic missiles

Mark 11 reentry body
GS reentry vehicles
. Mark 11 reentry body
RT intercontinental ballistic missiles

Mark 12 reentry body
GS reentry vehicles
. Mark 12 reentry body
RT intercontinental ballistic missiles

Mark 17 reentry body
GS reentry vehicles
. Mark 17 reentry body
RT intercontinental ballistic missiles

Markarian galaxies
GS celestial bodies
. galaxies
. . active galaxies
. . . Markarian galaxies
RT Seyfert galaxies

∞ markers
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT beacons
buoys
crayons
dyes
radio beacons
runway lights
smoke

market research
GS research
. market research
RT commerce
commodities
consumers
marketing
product development

marketing
RT commerce
commercialization
consumers
finance
industrial areas
management
market research
product development
supplying

marking
UF *labeling (marking)*
tagging
GS marking
. isotopic labeling
RT detection
identifying
materials handling
packaging
staining
∞ tracers

Markov chains
GS stochastic processes
. Markov processes
. . Markov chains
RT Monte Carlo method
random walk

Markov processes
GS stochastic processes
. Markov processes
. . Markov chains
RT random processes

Marots (ESA)
DEF Earlier name for the Marecs maritime satellites. Used for Maritime Communication Satellite (ESA) and Maritime Orbital Test Satellite.
UF *Maritime Communication Satellite (ESA)*
Maritime Orbital Test Satellite
GS artificial satellites
. communication satellites
. . Marots (ESA)
. ESA satellites
. . Marots (ESA)
. maritime satellites
. . Marots (ESA)
ESA spacecraft
. ESA satellites
. . Marots (ESA)
RT European Space Agency
Marisat satellites
rangefinding
rescue operations
ship terminals

Marquardt R4D engine
GS engines
. Marquardt R4D engine
RT Apollo project
auxiliary propulsion
command modules
∞ reaction control
satellite attitude control
spacecraft control

∞ mars
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT MARS (Manned Reusable Spacecraft)
Mars (planet)
navigation aids
tracking stations

MARS (Manned Reusable Spacecraft)
SN (NOT RESTRICTED TO SPACECRAFT FOR FLIGHT TO PLANET MARS)
UF *Manned Aerodynamic Reusable Spaceship*
GS manned spacecraft
. MARS (Manned Reusable Spacecraft)
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . MARS (Manned Reusable Spacecraft)
RT ferry spacecraft
maneuverable spacecraft
∞ mars

Mars (planet)
GS celestial bodies
. planets
. . terrestrial planets
. . . **Mars (planet)**
RT Amor asteroid
Apollo asteroids
Deimos
dust storms
manned Mars missions
∞ mars
Mars atmosphere
Mars bases
Mars environment
Mars sample return missions
Mars surface
Mars volcanoes
Phobos
planetary craters
planetary cryospheres
polar caps
terraforming

Mars atmosphere
GS environments
. extraterrestrial environments
. . planetary environments
. . . Mars environment
. . . . **Mars atmosphere**
. . . planetary atmospheres
. . . . **Mars atmosphere**
RT aerospace environments
Mars (planet)
Mars volcanoes
planetary ionospheres
planetary meteorology

Mars bases
(added September 1994)
UF *Mars colonies*
GS space bases
. space colonies
. . **Mars bases**
RT extraterrestrial environments
long duration space flight
lunar bases
Mars (planet)
space habitats

Mars colonies
USE **Mars bases**

Mars craters
DEF Craters from meteoritic impact on the surface of Mars.
GS craters
. planetary craters
. . **Mars craters**
RT cratering
ejecta
impact damage
meteorite craters
meteoritic damage

Mars environment
GS environments
. extraterrestrial environments
. . planetary environments
. . . **Mars environment**
. . . . Mars atmosphere
RT dust storms
Mars (planet)
Mars volcanoes
terraforming

Mars Excursion Module
UF *MEM (excursion module)*
GS modules
. spacecraft modules
. . landing modules
. . . **Mars Excursion Module**
soft landing spacecraft
. landing modules
. . **Mars Excursion Module**
spacecraft components
. spacecraft modules
. . landing modules
. . . **Mars Excursion Module**
RT Mars exploration

Mars exploration
(added September 1994)
GS exploration
. space exploration
. . **Mars exploration**
RT Earth–Mars trajectories
interplanetary flight
lunar exploration
manned Mars missions
Mars Excursion Module
Marsokhod Mars roving vehicles
space colonies

Mars Geoscience Climatology Orbiter
USE **Mars Observer**

Mars landing
GS landing
. spacecraft landing
. . planetary landing
. . . **Mars landing**
RT AEPS
Mars Pathfinder
Mars sample return missions
soft landing
Viking 1975 entry vehicle

Mars Observer
UF *Mars Geoscience Climatology Orbiter*
MGCO
GS interplanetary spacecraft
. Mars probes
. . **Mars Observer**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars Observer**

Mars Pathfinder
(added January 1996)
GS interplanetary spacecraft
. Mars probes
. . **Mars Pathfinder**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars Pathfinder**
RT exobiology
landing sites
Mars landing
parachute descent
planetary geology

Mars photographs
GS photographs
. **Mars photographs**
RT photography
satellite–borne photography
spaceborne photography

Mars probes
GS interplanetary spacecraft
. **Mars probes**
. . Advanced Reconn Electric Spacecraft
. . Mariner 3 space probe
. . Mariner 4 space probe
. . Mariner 6 space probe
. . Mariner 7 space probe
. . Mariner 8 space probe
. . Mariner 9 space probe
. . Mars 1 spacecraft
. . Mars 2 spacecraft
. . Mars 3 spacecraft
. . Mars 4 Spacecraft
. . Mars 5 spacecraft
. . Mars 6 spacecraft
. . Mars 7 spacecraft
. . Mars Observer
. . Mars Pathfinder
. . Viking 1975 entry vehicle
. . Viking spacecraft
. . . Viking 1 spacecraft
. . . . Viking lander 1
. . . . Viking orbiter 1
. . . Viking 2 spacecraft
. . . . Viking lander 2
. . . . Viking orbiter 2
. . . Viking lander spacecraft
. . . . Viking lander 1
. . . . Viking lander 2
. . . Viking orbiter spacecraft
. . . . Viking orbiter 1
. . . . Viking orbiter 2
. . . . Viking orbiter 1975
. . Zond 2 space probe
unmanned spacecraft
. space probes
. . **Mars probes**
. . . Advanced Reconn Electric Spacecraft
. . . Mariner 3 space probe
. . . Mariner 4 space probe
. . . Mariner 6 space probe
. . . Mariner 7 space probe
. . . Mariner 8 space probe
. . . Mariner 9 space probe
. . . Mars 1 spacecraft
. . . Mars 2 spacecraft
. . . Mars 3 spacecraft
. . . Mars 4 Spacecraft
. . . Mars 5 spacecraft
. . . Mars 6 spacecraft
. . . Mars 7 spacecraft
. . . Mars Observer
. . . Mars Pathfinder
. . . Viking 1975 entry vehicle
. . . Viking spacecraft
. . . . Viking 1 spacecraft
. . . . . Viking lander 1
. . . . . Viking orbiter 1
. . . . Viking 2 spacecraft
. . . . . Viking lander 2
. . . . . Viking orbiter 2
. . . . Viking lander spacecraft
. . . . . Viking lander 1
. . . . . Viking lander 2
. . . . Viking orbiter spacecraft
. . . . . Viking orbiter 1
. . . . . Viking orbiter 2
. . . . . Viking orbiter 1975
. . . Zond 2 space probe
RT Mariner program
Mars sample return missions
outer planets explorers
Venus probes
Voyager project
Zond space probes

Mars Rover Sample Return Mission
USE **Mars sample return missions**

Mars sample return missions
(added March 1989)
UF *Mars Rover Sample Return Mission*
GS space missions
. **Mars sample return missions**
RT Mars (planet)
Mars landing
Mars probes
Mars surface samples
NASA space programs
roving vehicles
samples
space exploration

Mars satellites
GS celestial bodies
. natural satellites
. . **Mars satellites**
. . . Deimos
. . . Phobos

Mars surface
GS planetary surfaces
. **Mars surface**
RT canals
dust storms
Mars (planet)
Mars volcanoes
meteorite craters
planetary craters
∞ surfaces
terraforming
topography

Mars surface samples
GS samples
. **Mars surface samples**
RT assaying
chemical analysis
Mars sample return missions
soil sampling
specimens
∞ surfaces
Viking lander 1
Viking lander 2

Mars volcanoes
DEF Volcanoes on the planet Mars.
GS geology
. planetary geology
. . **Mars volcanoes**
. volcanoes
. . **Mars volcanoes**
landforms
. volcanoes
. . **Mars volcanoes**
RT basalt
calderas
cones (volcanoes)
effusives
lava
Mars (planet)
Mars atmosphere
Mars environment
Mars surface
mountains
orography
paleomagnetism
petrology
Rouse belts
volcanology

Mars 1 spacecraft
GS interplanetary spacecraft
. Mars probes
. . **Mars 1 spacecraft**
Soviet spacecraft
. **Mars 1 spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars 1 spacecraft**
RT U.S.S.R. space program

Mars 2 spacecraft
GS interplanetary spacecraft
. Mars probes
. . **Mars 2 spacecraft**
Soviet spacecraft
. **Mars 2 spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars 2 spacecraft**
RT U.S.S.R. space program

Mars 3 spacecraft
GS interplanetary spacecraft
. Mars probes
. . **Mars 3 spacecraft**
Soviet spacecraft
. **Mars 3 spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars 3 spacecraft**
RT U.S.S.R. space program

Mars 4 Spacecraft
DEF One of a series of Soviet unmanned spacecraft designed for Mars exploration.
GS interplanetary spacecraft
. Mars probes
. . **Mars 4 Spacecraft**
Soviet spacecraft
. **Mars 4 Spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars 4 Spacecraft**
RT U.S.S.R. space program

Mars 5 spacecraft
GS interplanetary spacecraft
. Mars probes
. . **Mars 5 spacecraft**
Soviet spacecraft
. **Mars 5 spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars 5 spacecraft**
RT U.S.S.R. space program

Mars 6 spacecraft
GS interplanetary spacecraft
. Mars probes
. . **Mars 6 spacecraft**
Soviet spacecraft
. **Mars 6 spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars 6 spacecraft**
RT U.S.S.R. space program

Mars 7 spacecraft
GS interplanetary spacecraft
. Mars probes
. . **Mars 7 spacecraft**
Soviet spacecraft
. **Mars 7 spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Mars 7 spacecraft**
RT U.S.S.R. space program

Mars 69 project
GS programs
. NASA programs
. . NASA space programs
. . . **Mars 69 project**
. projects
. . **Mars 69 project**
. space programs
. . NASA space programs
. . . **Mars 69 project**
RT Mariner 6 space probe
Mariner 7 space probe
space exploration

Mars 71 project
GS programs
. NASA programs
. . NASA space programs
. . . **Mars 71 project**
. projects
. . **Mars 71 project**
. space programs
. . NASA space programs
. . . **Mars 71 project**
RT Mariner 8 space probe
space exploration

marshes
USE **marshlands**

marshlands
DEF Transitional land–water areas, covered at least part of the time by estuarine or coastal waters and characterized by aquatic and grasslike vegetation. Used for bogs, coastal marshlands, marshes, and swamps.
UF *bogs*
coastal marshlands
marshes
swamps
GS land
. wetlands
. . **marshlands**
RT bayous
Earth resources
Earth surface
flats (landforms)
muskegs
oceanography
tidal flats
waterfowl

Marsokhod Mars roving vehicles
(added August 1995)
GS surface vehicles
. roving vehicles
. . **Marsokhod Mars roving vehicles**
RT Lunokhod lunar roving vehicles
Mars exploration
planetary surfaces
∞ vehicles

martensite
RT austenite
hardening (materials)
heat treatment
iron alloys
martensitic stainless steels
microstructure
phase transformations
steels

martensitic stainless steels
GS alloys
. iron alloys

. . **steels**
. . . **stainless steels**
. . . . **martensitic stainless steels**
RT **austenitic stainless steels**
maraging steels
martensite

martensitic transformation
DEF A phase transformation occuring in some metals and resulting in formation of martensite.
GS **phase transformations**
. **martensitic transformation**
RT **austenite**

Martin aircraft
GS **Martin aircraft**
. B-26 aircraft
. B-57 aircraft
RT ∞ aircraft

martingales
DEF In game theory, a procedure for recouping one's losses in previous wagers by doubling or otherwise increasing the amount bet.
RT **decision theory**
game theory
∞ **mathematics**
probability theory
stochastic processes

Martinique
GS **landforms**
. **islands**
. . **West Indies**
. . . **Martinique**
nations
. **France**
. . **Martinique**
RT **Caribbean region**

Maryland
GS **nations**
. **United States**
. . **Maryland**
RT **Allaghany Plateau (US)**
Assateague Island (MD-VA)
Chesapeake Bay (US)
Delmarva Peninsula (DE-MD-VA)
Potomac River Valley (MD-VA-WV)
Susquehanna River Basin (MD-NY-PA)

mascons
DEF Large scale, high density lunar mass concentrations below ringed mare.
GS **composition (property)**
. **concentration (composition)**
. . **mascons**
RT **center of mass**
gravity anomalies
mass
weight (mass)

maser materials
(added June 1989)
RT **laser materials**
masers
∞ **materials**
∞ **materials science**

maser outputs
GS **output**
. **maser outputs**
RT ∞ **coherence**
diffraction radiation
laser outputs
maser pumping
pulse duration
radiant flux density
water masers
wavelengths

maser pumping
(added June 1989)
RT **laser pumping**
maser outputs
masers
optical pumping
∞ **pumping**

maser resonators
USE **masers**

masers
UF *maser resonators*
paramagnetic amplifiers
rasers
GS **stimulated emission devices**
. **masers**
. . **gas masers**
. . . **hydrogen masers**
. . **interstellar masers**
. . **proton masers**
. . **traveling wave masers**
. . **water masers**
RT **amplifiers**
atomic clocks
coherent electromagnetic radiation
cross relaxation
diffraction radiation
frequency standards
krypton fluoride lasers
lasers
maser materials
maser pumping
microwave amplifiers
molecular oscillators
resonators
stimulated emission
transient oscillations
two-wavelength lasers
ultraviolet lasers

masking
GS **masking**
. **target masking**
RT **audiometry**
chemisorption
coverings
photomasks

masks
GS **masks**
. **oxygen masks**
RT **chemical defense**
protective clothing

Masonite (trademark)
RT **cellulose**
∞ **construction materials**
trees (plants)
wood

masonry
GS **masonry**
. **bricks**
RT **cements**
ceramics
clays
concretes
construction
∞ **construction materials**
mortars (material)
structural members
tiles
veneers

mass
DEF A quantity characteristic of a body, which relates the attraction of this body toward another body. Since the mass of a body is not fixed in magnitude, all masses are referred to the standard kilogram, which is a lump of platinum. Used for low mass.
UF *low mass*
GS **mass**
. **center of mass**
. **critical mass**
. **galactic mass**
. **missing mass (astrophysics)**
. **particle mass**
. . **electron mass**
. **planetary mass**
. **stellar mass**
. **subcritical mass**
RT **center of gravity**
de Broglie wavelengths
inertia
mascons
mass to light ratios
moments of inertia
negative matter
relativistic effects
weight (mass)

∞ **mass balance**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT **balance**
mass distribution
material balance
variable mass systems

mass distribution
GS **distribution (property)**
. **mass distribution**
RT **aerodynamic balance**
aerodynamic stability
angular distribution
balance
ballast (mass)
charge distribution
cosmology
counterbalances
density wave model
∞ **distribution**
flux density
force distribution
galactic mass
intergalactic media
interplanetary medium
interstellar matter
loading moments
loads (forces)
∞ **mass balance**
mass to light ratios
meteoroid concentration
missing mass (astrophysics)
moment distribution
moments of inertia
pressure distribution
size distribution
star distribution
static loads
structural design criteria
variable mass systems

mass drivers
(added May 1989)
DEF Electromagnetic devices for the linear acceleration of projectiles or payloads. Applications include orbital insertion and transfer,

propulsion systems, and hypervelocity accelerators.
RT ∞ accelerators
electromagnetic acceleration
electromagnetic propulsion
launchers
magnetic levitation vehicles
moon–Earth trajectories
propulsion
railgun accelerators
spacecraft propulsion

mass filters
USE **fluid filters**

mass flow
GS fluid flow
. **mass flow**
RT Crocco–Lee theory
∞ flow
flow theory
gas flow
Kelvin–Helmholtz instability
kinetic theory
laminar flow
Lewis numbers
liquid flow
molecular interactions
multiphase flow
pipe flow
sediment transport
single–phase flow
sliding
slumping
solids flow
steady flow
steam flow
turbulent flow
uniform flow
unsteady flow

mass flow factors
RT discharge coefficient
flow coefficients
heat transfer coefficients
heat transmission
nozzle geometry

mass flow rate
GS rates (per time)
. **mass flow rate**
RT convective flow
diffusion coefficient
flow velocity
pneumatic probes
specific impulse
transient pressures

mass ratios
DEF The ratios of the mass of the propellant charge of a rocket to the total mass of the rocket when charged with the propellant.
GS ratios
. **mass ratios**
. . mass to light ratios
. . mixing ratios
. . payload mass ratio
. . propellant mass ratio
RT metallicity
pressure ratio
structural weight
thrust–weight ratio

mass spectra
GS spectra
. **mass spectra**
RT energy spectra
molecular spectra
radiation spectra

mass spectrometers
DEF Instruments that are capable of separating ionized molecules of different mass to charge ratio and measuring the respective ion currents. Used for ion spectrometers and retarding ion mass spectrometers.
UF *ion spectrometers*
retarding ion mass spectrometers
GS measuring instruments
. spectrometers
. . **mass spectrometers**
RT chemical analysis
gas analysis
ion mobility spectroscopy
microanalysis
neutron activation analysis
qualitative analysis
secondary ion mass spectrometry

mass spectrometry
USE **mass spectroscopy**

mass spectroscopy
UF *mass spectrometry*
GS spectroscopy
. **mass spectroscopy**
. . secondary ion mass spectrometry
RT chemical analysis
gas spectroscopy
magnetic spectroscopy
nuclear radiation spectroscopy
spectroscopic analysis
vacuum spectroscopy

mass to light ratios
DEF The ratio of the mass of celestial body to its luminosity.
GS ratios
. mass ratios
. . **mass to light ratios**
RT astronomy
astrophysics
galactic radiation
indexes (ratios)
luminosity
luminous intensity
mass
mass distribution
missing mass (astrophysics)
radiant flux density
stellar luminosity
stellar mass

mass transfer
RT ablation
charge transfer
convective flow
convective heat transfer
energy transfer
gas transport
gas–liquid interactions
heat transfer
Lewis numbers
porous boundary layer control
sediment transport
transferring
transpiration

Massachusetts
GS nations
. United States
. . **Massachusetts**

massaging
GS therapy
. **massaging**
RT fatigue (biology)
relaxation (physiology)

massifs
DEF Massive topographic and structural features, especially in orogenic belts, commonly formed of rocks more rigid than those of their surroundings. These rocks may be protruding bodies of basement rocks, consolidated during earlier orogenies, or younger plutonic bodies.
GS landforms
. **massifs**
RT Earth crust
∞ faults
geological faults
geology
mountains

massive stars
(added July 1991)
GS celestial bodies
. **stars**
. . **massive stars**
RT black holes (astronomy)
degenerate matter
stellar mass
supergiant stars
supermassive stars

massively parallel processors
(added December 1988)
UF *MPP (computers)*
GS data processing equipment
. computers
. . digital computers
. . . parallel computers
. . . . **massively parallel processors**
. . . . . Connection Machine
RT architecture (computers)
parallel processing (computers)

MAST shock tubes
USE **magnetic annular shock tubes**

mastication
UF *chewing*
RT digesting
eating
teeth

mastoids
GS anatomy
. head (anatomy)
. . skull
. . . **mastoids**
. musculoskeletal system
. . bones
. . . skull
. . . . **mastoids**
RT cranium
ear

matched filters
GS electromagnetic wave filters
. **matched filters**
RT communication equipment
demodulators
∞ filters
modulators
signal to noise ratios

matching
RT adjusting
comparison
fitting
homology
image resolution
impedance matching

mismatch (electrical)
pattern registration

material absorption
RT **absorbents**
absorbers (equipment)
∞ **absorption**
assimilation
extraction
hygroscopicity
radiation absorption
sorption
water treatment

material balance
GS **balance**
. **material balance**
. . **water balance**
RT **heat balance**
∞ **mass balance**
stoichiometry

material removal (machining)
USE **machining**

material strength
USE **mechanical properties**

∞ **materials**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *substances*
RT **ablative materials**
absorbents
absorbers (materials)
acceptor materials
aging (materials)
aircraft construction materials
airframe materials
amorphous materials
anisotropic media
binary systems (materials)
binders (materials)
bitumens
boron reinforced materials
Borsic (tradename)
brittle materials
carbonaceous materials
composite materials
concrete structures
∞ **construction materials**
contaminants
cork (materials)
curl (materials)
dislocations (materials)
donor materials
dredged materials
electric furnaces
electrons
epoxy matrix composites
fatigue (materials)
ferrimagnetic materials
ferroelectric materials
ferromagnetic materials
fissionable materials
foams
foils (materials)
fractures (materials)
glass
glassy carbon
granular materials
graphite–epoxy composites
hazardous materials
holes (electron deficiencies)
∞ **inorganic materials**
insulation
laminates
laser materials
lossless materials
low density materials
magnetic materials
maser materials
materials handling
materials recovery
∞ **materials science**
∞ **materials tests**
matrix materials
mechanical properties
metal matrix composites
molding materials
nonflammable materials
optical materials
organic materials
paper (material)
phase change materials
photoelastic materials
photoelectric materials
polymer matrix composites
porous materials
pyrolytic materials
pyrophoric materials
radioactive materials
radome materials
reactor materials
refractory materials
reinforcing materials
reserves
resources
self lubricating materials
semiconductors (materials)
sizing materials
solids
spacecraft construction materials
sponges (materials)
strategic materials
superhybrid materials
thermochromatic materials
thermoelectric materials
thickeners (materials)
three dimensional composites
vitreous materials
Vycor

materials handling
GS **materials handling**
. **ground handling**
. **propellant transfer**
. **remote handling**
RT **airfield surface movements**
∞ **automation**
blowers
canals
cargo
cargo aircraft
carts
chemical engineering
chutes
∞ **containers**
contingency
conveyors
cranes
delivery
dispensers
disposal
distributing
∞ **distribution**
distributors
dollies
dumping
ejection
ejectors
emptying
encapsulating
excavation
feeders
feeding (supplying)
fluid flow
fuel pumps
hauling
heavy lift airships
hoppers
loading operations
lunar logistics
marking
∞ **materials**
mechanical engineering
mines (excavations)
mooring
packaging
pipelines
∞ **pumping**
pumps
railroad humping tests
releasing
rigging
services
siphons
sprayers
spreading
stacks
∞ **storage**
tanks (containers)
tractors
transferring
transportation
trucks
unloading
vacuum pumps
waste disposal
wharves

materials recovery
SN (LIMITED TO TREATMENT OF A MATERIAL TO RECLAIM ONE OR MORE OF ITS COMPONENTS)
DEF The treatment of a material to reclaim one or more of its components.
GS **reclamation**
. **materials recovery**
. . **gas recovery**
. . **nuclear fuel reprocessing**
. . **solvolysis**
. . **water reclamation**
RT ∞ **absorption**
by–products
centrifuging
crystallization
disposal
distillation
extraction
filtration
∞ **materials**
∞ **precipitation**
precipitation (chemistry)
∞ **processing**
∞ **recovery**
recycling
refining
removal
∞ **separation**
waste management

∞ **materials science**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT **ceramics**
laser cutting
maser materials
∞ **materials**
metal foams

plastics
∞ properties
∞ science

materials testing reactors
USE **nuclear research and test reactors**

∞ **materials tests**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bend tests
burst tests
Charpy impact test
chemical analysis
compression tests
corrosion tests
destructive tests
electrophotometry
environmental tests
fatigue tests
fiber pullout
fuel tests
gas analysis
hardness tests
high temperature tests
impact tests
lubricant tests
magnetic measurement
∞ materials
mechanical properties
metallography
microanalysis
neutron radiography
nondestructive tests
propellant tests
quality
quality control
radiography
specifications
static tests
∞ tests
ultrasonic tests
wear tests
x ray analysis
x ray spectroscopy

mathematical analysis
USE **applications of mathematics**

mathematical logic
GS **mathematical logic**
. algorithms
. . genetic algorithms
. . parsing algorithms
. . simplex method
. . sorting algorithms
. axioms
. formulas (mathematics)
. . Bethe–Heitler formula
. lattices (mathematics)
. . Boolean algebra
. . . Boolean functions
. predicate calculus
. set theory
. . Borel sets
. . equivalence
. . threshold logic
RT branching (mathematics)
functions (mathematics)
hypotheses
induction (mathematics)
instruction sets (computers)
∞ logic
philosophy
proving
temporal logic
theorems
Turing machines
Venn diagrams

mathematical models
GS models
. **mathematical models**
. . analog simulation
. . BGK model
. . biological models (mathematics)
. . digital simulation
. . Mandelstam representation
. . Petri nets
. . Thomas–Fermi model
. . turbulence models
. . . Baldwin–Lomax turbulence model
. . . k–epsilon turbulence model
. . . k–omega turbulence model
. . Veneziano model
RT aircraft models
∞ applications of mathematics
astronomical models
asymptotic properties
atmospheric models
bond graphs
broken symmetry
chaos
computational astrophysics
computational grids
computer systems simulation
computerized simulation
continuum modeling
control systems design
decision theory
dynamic models
dynamic programming
dynamical systems
exhaust flow simulation
experiment design
factorial design
flow charts
footprints
forecasting
functions (mathematics)
game theory
goodness of fit
graph theory
inelastic stress
inventory controls
large eddy simulation
likelihood ratio
linear prediction
lofting
lumped parameter systems
method of moments
∞ missile simulators
model reference adaptive control
Monte Carlo method
numerical weather forecasting
ocean models
operations research
outliers (statistics)
parameter identification
parameterization
quantiles
queueing theory
regression coefficients
risk
robustness (mathematics)
scheduling
similarity theorem
simulation
spacecraft models
spatial dependencies
statistical distributions
stochastic processes
system identification
systems analysis
systems engineering
systems simulation
three dimensional models
trajectory analysis
two dimensional bodies
two dimensional models
validity
war games

mathematical programming
SN (LIMITED TO MATHEMATICAL OPTIMIZATION THEORY—EXCLUDES COMPUTER PROGRAMMING)
GS optimization
. **mathematical programming**
. . dynamic programming
. . linear programming
. . nonlinear programming
. . quadratic programming
RT game theory
operations research
∞ programming
simplex method

mathematical tables
GS tables (data)
. **mathematical tables**
RT information
numerical analysis
random numbers

∞ **mathematics**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT algebra
analysis (mathematics)
axioms
bond graphs
calculus
current algebra
duality theorem
formulas (mathematics)
fractals
functions (mathematics)
geometry
inequalities
information theory
integrals
Latin square method
lattices (mathematics)
martingales
morphology
number theory
numerical analysis
primitive equations
∞ principles
probability theory
rings (mathematics)
∞ science
series expansion
stars (mathematics)
statistical analysis
superposition (mathematics)
symbols
theorems

Mathieu equation
USE **Mathieu function**

Mathieu function
UF *Mathieu equation*
GS analysis (mathematics)
. complex variables
. . **Mathieu function**
functions (mathematics)
. **Mathieu function**
RT boundary value problems

differential equations
eigenvectors
∞ equations
Hill determinant
orthogonal functions

Matra missile
GS missiles
. air to air missiles
. . **Matra missile**
RT solid propellant rocket engines

∞ **matrices**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT composite materials
epoxy matrix composites
eutectic composites
∞ grids
∞ imbeddings
lattices (mathematics)
matrices (circuits)
matrices (mathematics)
metal matrix composites
monotectic alloys
polymer matrix composites

matrices (circuits)
GS circuits
. **matrices (circuits)**
RT logic circuits
∞ matrices
switching circuits

matrices (mathematics)
UF *differential algebra*
matrix analysis
GS algebra
. vector spaces
. . **matrices (mathematics)**
. . . adjoints
. . . canonical forms
. . . eigenvalues
. . . eigenvectors
. . . Hessian matrices
. . . Jordan form
. . . stiffness matrix
RT arrays
chiral dynamics
determinants
energy methods
factor analysis
finite element method
Gaussian elimination
Hermitian polynomial
isoperimetric problem
linear equations
linear programming
linear transformations
lumped parameter systems
∞ matrices
method of moments
roots of equations
simplex method
simultaneous equations
subgroups
U spin space
Walsh function

matrix analysis
USE **matrices (mathematics)**

matrix management
DEF An organized approach to administration of a program by defining and structuring all elements to form a single system with components united by interaction.
GS management
. **matrix management**
RT allocations
logistics
management methods
∞ methodology
operations research
productivity
project planning
scheduling
tasks

matrix materials
DEF The ingredients used as binding agents to produce composite materials.
RT bismaleimide
ceramic matrix composites
composite materials
debonding (materials)
epoxy matrix composites
fiber composites
fiber–matrix interfaces
functionally gradient materials
laminates
∞ materials
metal matrix composites
polymer matrix composites
reinforcing materials
resin matrix composites
resin transfer molding

matrix methods
SN (LIMITED TO METHODS FOR STRUCTURAL ANALYSIS)
UF *matrix stress calculation*
GS structural analysis
. **matrix methods**
RT equilibrium methods
∞ methodology
NASTRAN
spline functions

matrix stress calculation
USE **matrix methods**

matrix theory
RT operators (mathematics)
∞ theories

matter (physics)
GS **matter (physics)**
. dark matter
. degenerate matter
. negative matter
. rotating matter
. . rotating fluids
. . . rotating liquids
. . . rotating plasmas
RT antimatter
condensed matter physics
extraterrestrial matter
∞ physics

matter–antimatter propulsion
(added December 1988)
DEF Spacecraft propulsion by use of matter–antimatter annihilation reactions.
GS propulsion
. spacecraft propulsion
. . **matter–antimatter propulsion**
RT annihilation reactions
antimatter
interplanetary flight
interplanetary spacecraft
interstellar travel
negative matter propulsion
nuclear propulsion
positron annihilation
rocket engines

MATTS (systems)
UF *multiple target trajectory systems*
GS networks
. tracking networks
. . **MATTS (systems)**
RT abort trajectories
airborne equipment
angular correlation
target acquisition

maturing
USE **growth**

Mauler missile
GS missiles
. antiaircraft missiles
. . **Mauler missile**
. antimissile missiles
. . **Mauler missile**
. surface to air missiles
. . **Mauler missile**
RT single stage rocket vehicles
solid propellant rocket engines

Mauritania
GS nations
. **Mauritania**
RT Africa

Mauritius
(added February 1989)
GS landforms
. islands
. . **Mauritius**
nations
. **Mauritius**
RT Africa
Indian Ocean

Maverick missiles
GS missiles
. air to surface missiles
. . **Maverick missiles**

Max Hoiste MH–262 aircraft
USE **MH–262 aircraft**

maxima
GS analysis (mathematics)
. real variables
. . extremum values
. . . **maxima**
RT apexes
calculus of variations
cusps (mathematics)
minima
optimization
∞ peaks
penalty function
range (extremes)
zenith

maximum entropy method
DEF Procedure used in estimating high resolution power spectra from short data lengths.
GS entropy (statistics)
. **maximum entropy method**
spectrum analysis
. **maximum entropy method**
RT [illegible] functions
[illegible]
[illegible] transformation
information theory
∞ methodology
power spectra
signal processing
signal to noise ratios
statistical analysis
time series analysis

maximum likelihood estimates
RT confidence limits
Cramer–Rao bounds
forecasting
goodness of fit
likelihood ratio
parameter identification
predictions
reliability
risk
system identification

maximum principle
RT complex variables
differential equations
elliptic differential equations
harmonic functions
pontryagin principle
real variables

maximum usable frequency
DEF For a given distance from a transmitter, the highest frequency at which sky waves can be received.
GS frequencies
. **maximum usable frequency**
RT frequency assignment
frequency reuse
high frequencies
very high frequencies

Maxwell bodies
RT classical mechanics
continuum mechanics
Hookes law
oscillation dampers
relaxation time

Maxwell equation
RT Boltzmann–Vlasov equation
Born–Infeld theory
electricity
electrodynamics
electromechanics
∞ equations
Gauss equation
magnetic charge density
magnetic properties
magnetoelectric media
Poynting theorem
∞ Stokes law

Maxwell fluids
RT compressible fluids
fluid mechanics
∞ fluids
rheology
viscoelasticity
viscous flow
viscous fluids

Maxwell–Boltzmann density function
UF *Maxwellian distribution (density)*
GS functions (mathematics)
. **Maxwell–Boltzmann density function**
statistical analysis
. **Maxwell–Boltzmann density function**
RT density distribution
kinetic theory
probability theory
statistical mechanics

Maxwell–Mohr method
RT deflection
∞ equilibrium
∞ methodology
static deformation
trusses

Maxwellian distribution (density)
USE **Maxwell–Boltzmann density function**

Mayer problem
RT∞ condensation
critical point
Gibbs free energy
∞ molecular physics
∞ problems
supersaturation

maypole antennas
DEF A class of antennas which use the deployable reflector concept for large space systems applications.
GS antennas
. **maypole antennas**
RT antenna design
large space structures
space erectable structures

maze learning
GS learning
. **maze learning**
RT problem solving

MB–1 rocket vehicle
USE **Genie rocket vehicle**

MBM junctions
DEF Diode devices using metal–barrier–metal layers. Used for metal–barrier–metal junctions.
UF *metal–barrier–metal junctions*
GS semiconductor junctions
. **MBM junctions**
RT barrier layers
∞ barriers
junction transistors
solid state devices

McDonnell aircraft
GS McDonnell Douglas aircraft
. **McDonnell aircraft**
. . C–9 aircraft
. . DC 10 aircraft
. . F–4 aircraft
. . F–101 aircraft
RT∞ aircraft

McDonnell Douglas aircraft
GS **McDonnell Douglas aircraft**
. C–17 aircraft
. Douglas aircraft
. . A–1 aircraft
. . A–3 aircraft
. . A–4 aircraft
. . B–66 aircraft
. . C–9 aircraft
. . C–47 aircraft
. . C–54 aircraft
. . C–118 aircraft
. . C–124 aircraft
. . C–133 aircraft
. . D–558 aircraft
. . DC 3 aircraft
. . DC 7 aircraft
. . DC 8 aircraft
. . DC 9 aircraft
. . DC 10 aircraft
. . PD–808 aircraft
. . X–3 aircraft
. F–18 aircraft
. McDonnell aircraft
. . C–9 aircraft
. . DC 10 aircraft
. . F–4 aircraft
. . F–101 aircraft
. MD 11 aircraft
. MD 80 aircraft
. X–36 aircraft
RT∞ aircraft

McLaurin series
USE **MacLaurin series**

Mcleod gages
GS measuring instruments
. pressure gages
. . vacuum gages
. . . **Mcleod gages**
vacuum apparatus
. vacuum gages
. . **Mcleod gages**
RT ionization gages
Knudsen gages
Pirani gages
pressure measurement

McMurdo sound
GS regions
. polar regions
. . Antarctic regions
. . . **McMurdo sound**
. remote regions
. . Antarctic regions
. . . **McMurdo sound**
sounds (topographic features)
. **McMurdo sound**
Southern Hemisphere
. Antarctic regions
. . **McMurdo sound**
RT Ross ice shelf

MCR reactors
USE **military compact reactors**

MD 11 aircraft
(added October 1994)
UF *DC 11 aircraft*
GS commercial aircraft
. **MD 11 aircraft**
jet aircraft
. **MD 11 aircraft**
McDonnell Douglas aircraft
. **MD 11 aircraft**
passenger aircraft
. **MD 11 aircraft**
transport aircraft
. **MD 11 aircraft**
RT∞ aircraft

MD 80 aircraft
(added October 1994)
GS commercial aircraft
. **MD 80 aircraft**
jet aircraft
. **MD 80 aircraft**
McDonnell Douglas aircraft
. **MD 80 aircraft**
passenger aircraft
. **MD 80 aircraft**
transport aircraft
. **MD 80 aircraft**
RT∞ aircraft
DC 9 aircraft

MDA
USE **multiple docking adapters**

ME P–180 aircraft
USE **P–180 aircraft**

ME P–308 aircraft
USE **P–308 aircraft**

meadowlands
USE **grasslands**

mean
GS **average**
. **mean**
moments
. **distribution moments**
. . **mean**
RT **median (statistics)**
mode (statistics)
normality
quality control
range (extremes)
statistical analysis
variance (statistics)

mean free path
DEF Of any particle, the average distance that a particle travels between successive collisions with the other particles of an ensemble. Specifically, the average distance traveled by the molecules of a perfect gas between consecutive collisions with one another. For any process the reciprocal of the cross section per unit volume for that process.
RT **collision parameters**
∞ **cross sections**
Knudsen flow
particle collisions
particle motion
∞ **paths**
scattering
vacuum

mean square values
DEF In statistics, values representing the average of the sum of the squares of the deviations from the mean value.
GS **analysis (mathematics)**
. **numerical analysis**
. . **approximation**
. . . **mean square values**
RT **algorithms**
error analysis
least squares method

mean time between failures
USE **MTBF**

meanders
DEF Freely developing sinuous curves, bends, loops, turns, or windings in the courses of streams. They are produced by mature streams swinging from side to side as they flow across flood plains or shift course laterally toward the convex side of an original curve.
RT **open channel flow**
rapids
river basins
rivers
streams
topography
valleys

measure and integration
UF *integration (real variables)*
measure theory
Riemann integral
GS **analysis (mathematics)**
. **real variables**
. . **measure and integration**
. . . **binary integration**
. . . **Borel sets**
. . . **functional integration**
. . . **integral calculus**
. . . **J integral**
. . . **Lebesgue theorem**
. . . **numerical integration**
. . . . **Runge–Kutta method**
. . . **Stieltjes integral**
. . . **weighting functions**
RT **Fourier analysis**

measure theory
USE **measure and integration**

∞ **measurement**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The technical action required to assign values (numbers) to represent certain properties or attributes, using rules based on scientific laws. Used for determination, measuring, and quantization.
UF *determination*
measuring
quantization
RT **acceleration measurement**
accuracy
acoustic measurement
airborne range and orbit determination
aircraft instruments
analog data
astrometry
audiometry
chemical analysis
confidence limits
consistency
counting
∞ **data**
definition
densimeters
density measurement
depth measurement
detection
dilatometry
dimensional measurement
Downrange Antimissile Measurement Program
downrange measurement
drag measurement
Earth terminal measurement system
electrical measurement
electromagnetic measurement
electromagnetic noise measurement
ellipsometry
estimating
evaluation
examination
flow measurement
frequency measurement
friction measurement
gamma ray absorptiometry
geometry
gravimetry
heat measurement
high alt target and background measurement
humidity measurement
identifying
in situ measurement
International System of Units
latitude measurement
longitude measurement
macroscopic equations
magnetic measurement
∞ **measures**
measuring instruments
mechanical measurement
metrology
monitors
noise measurement
nonintrusive measurement
optical measurement
optometry
photographic measurement
pneumography
pressure measurement
proving
pupillometry
radar measurement
radiation measurement
radioactive age determination
rangefinding
signal measurement
size determination
sounding
sphygmography
standards
strain measurement
synoptic measurement
temperature measurement
thrust measurement
time measurement
trajectory measurement
ultrasonic densimeters
units of measurement
velocity measurement
vibration measurement
weight measurement
wind measurement

∞ **measures**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT **criteria**
∞ **measurement**
standards

measuring
USE **measurement**

measuring instruments
UF *fluxmeters*
gages
meters
rate meters
GS **measuring instruments**
. **accelerometers**
. . **strain gage accelerometers**
. **ammeters**
. . **micromilliammeters**
. . **thermoelement ammeters**
. **analyzers**
. . **engine analyzers**
. . **signal analyzers**
. **anemometers**
. . **drag force anemometers**
. . **hot–film anemometers**
. . **hot–wire anemometers**
. . **laser anemometers**
. . **sonic anemometers**
. **balloon–borne instruments**
. **bathymeters**
. **burettes**
. **calorimeters**
. . **bomb calorimeters**
. . **drop calorimeters**
. . **flame calorimeters**
. **comparators**
. **conductivity meters**
. . **electrical conductivity meters**
. **coulometers**
. **counters**
. . **radiation counters**
. . . **Cerenkov counters**
. . . **electron counters**
. . . **Geiger counters**
. . . **neutron counters**
. . . . **neutron spectrometers**

. . . particle telescopes
. . . proportional counters
. . . quantum counters
. . . scintillation counters
. . . spark chambers
. deformeters
. densimeters
. . ultrasonic densimeters
. densitometers
. . microdensitometers
. distance measuring equipment
. . altimeters
. . . laser altimeters
. . . radio altimeters
. . geodimeters
. . range finders
. . . optical range finders
. . . . laser range finders
. . stadimeters
. . tellurometers
. dynamometers
. elastometers
. electrometers
. electron probes
. engine monitoring instruments
. ergometers
. eudiometers
. extensometers
. field intensity meters
. flame probes
. flight recorders
. . flight load recorders
. flowmeters
. . gas meters
. . hot-wire flowmeters
. . rheometers
. force vector recorders
. fuel gages
. . capacitive fuel gages
. galvanometers
. Gerdien condensers
. goniometers
. . photogoniometers
. . radiogoniometers
. gravimeters
. gravity gradiometers
. heliometers
. . pyrheliometers
. hydrometers
. hypsometers
. impedance probes
. . radio frequency impedance probes
. indicating instruments
. . approach indicators
. . astrolabes
. . attitude indicators
. . . gyro horizons
. . cloud height indicators
. . compasses
. . . gyrocompasses
. . . magnetic compasses
. . . solar compasses
. . flow direction indicators
. . . wind vanes
. . position indicators
. . . plan position indicators
. . . radio direction finders
. . . spacecraft position indicators
. . smoke detectors
. . speed indicators
. . . tachometers
. . weight indicators
. . . microbalances
. . . strain gage balances
. . . thermobalances
. interferometers
. . etalons
. . Fabry–Perot interferometers
. . infrared interferometers
. . Mach–Zehnder interferometers
. . Michelson interferometers
. . microwave interferometers
. . phase switching interferometers
. . radio interferometers
. ion probes
. ion traps (instrumentation)
. laser doppler velocimeters
. lysimeters
. magnetic probes
. magnetometers
. . variometers
. mechanograms
. meteorological instruments
. . barometers
. . cloud height indicators
. . dropsondes
. . radiometeorographs
. . radiosondes
. . . ionosondes
. . . rawinsondes
. . rain gages
. . weather data recorders
. . wind vanes
. micrometers
. microwave probes
. . microwave plasma probes
. microwave sensors
. . Advanced Microwave Sounding Unit
. moisture meters
. . hygrometers
. . . psychrometers
. monochromators
. noise meters
. ohmmeters
. optical measuring instruments
. . cathetometers
. . diffractometers
. . Ebert spectrometers
. . ellipsometers
. . etalons
. . geodimeters
. . haploscopes
. . infrared spectrometers
. . . filter wheel infrared spectrometers
. . light scattering meters
. . microdensitometers
. . nephelometers
. . oculometers
. . optical pyrometers
. . optical range finders
. . . laser range finders
. . photogoniometers
. . photometers
. . . electrophotometers
. . . ultraviolet spectrometers
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping Spectrometer
. . . ultraviolet spectrophotometers
. . polarimeters
. . reflectometers
. . . microwave reflectometers
. . refractometers
. . sextants
. . spectrophotometers
. . . infrared spectrophotometers
. . . ultraviolet spectrophotometers
. . transits
. . . theodolites
. . . . clinotheodolites
. . transmissometers
. oscillographs
. oxygen analyzers
. penetrometers
. plasma probes
. . electrostatic probes
. polariscopes
. . Senarmont polariscopes
. potentiometers (instruments)
. pressure gages
. . barometers
. . manometers
. . osmometers
. . piezoelectric gages
. . piezometers
. . vacuum gages
. . . ionization gages
. . . . alphatrons
. . . . Bayard–Alpert ionization gages
. . . . Penning gages
. . . . Philips ionization gages
. . . Knudsen gages
. . . Mcleod gages
. . . Pirani gages
. profilometers
. protractors
. radiation measuring instruments
. . actinometers
. . . infrared spectrometers
. . . . filter wheel infrared spectrometers
. . . pyranometers
. . . radiometers
. . . . Dicke radiometers
. . . . infrared detectors
. . . . . FLIR detectors
. . . . . infrared radiometers
. . . . . Advanced Very High Resolution Radiometer
. . . . . infrared scanners
. . . . . visible infrared spin scan radiometer
. . . . microwave radiometers
. . . . . Advanced Microwave Sounding Unit
. . . . passive L-band radiometers
. . . . pressure modulator radiometers
. . . . spectroradiometers
. . . solar spectrometers
. . . spectroheliographs
. . . spectrophotometers
. . . . infrared spectrophotometers
. . . . ultraviolet spectrophotometers
. . . ultraviolet detectors
. . . . ultraviolet spectrometers
. . . . . high dispersion spectrographs
. . . . . Total Ozone Mapping Spectrometer
. . . . ultraviolet spectrophotometers
. . . x ray detectors
. . bolometers
. . Ebert spectrometers
. . electrostatic probes
. . Fabry–Perot spectrometers
. . hodoscopes
. . infrared instruments
. . . infrared detectors
. . . . FLIR detectors
. . . . infrared radiometers
. . . . . Advanced Very High Resolution Radiometer
. . . . . infrared scanners
. . . . . visible infrared spin scan radiometer
. . . infrared interferometers
. . . infrared spectrometers
. . . . filter wheel infrared spectrometers

. . . infrared spectrophotometers
. . photometers
. . . electrophotometers
. . . ultraviolet spectrometers
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping Spectrometer
. . . ultraviolet spectrophotometers
. . radiation counters
. . . Cerenkov counters
. . . electron counters
. . . Geiger counters
. . . neutron counters
. . . . neutron spectrometers
. . . particle telescopes
. . . proportional counters
. . . quantum counters
. . . scintillation counters
. . . spark chambers
. . radiation detectors
. . . dosimeters
. . . . threshold detectors (dosimeters)
. . . Golay detector cells
. . . silicon radiation detectors
. . riometers
. rationeters
. resonance probes
. respirometers
. satellite-borne instruments
. . Advanced Microwave Sounding Unit
. . Advanced Very High Resolution Radiometer
. . AMPS (satellite payload)
. . Total Ozone Mapping Spectrometer
. scatterometers
. shock measuring instruments
. sondes
. . dropsondes
. . Judi-Dart rocket
. . radiosondes
. . . ionosondes
. . . rawinsondes
. spectrometers
. . Ebert spectrometers
. . Fabry-Perot spectrometers
. . gamma ray spectrometers
. . imaging spectrometers
. . infrared spectrometers
. . . filter wheel infrared spectrometers
. . laser spectrometers
. . mass spectrometers
. . microwave spectrometers
. . neutron spectrometers
. . Solar Backscatter UV Spectrometer
. . solar spectrometers
. . spectroheliographs
. . time of flight spectrometers
. . ultraviolet spectrometers
. . . high dispersion spectrographs
. . . Total Ozone Mapping Spectrometer
. . x ray spectrometers
. sputtering gages
. strain gages
. temperature measuring instruments
. . bathythermographs
. . optical pyrometers
. . pneumatic probes
. . pyrometers
. . . radiation pyrometers
. . . thermocouple pyrometers
. . temperature probes
. . thermometers
. . . resistance thermometers
. tensiometers
. tensometers
. thermal conductivity gages
. tiltmeters
. time measuring instruments
. . clocks
. . . atomic clocks
. . . autonomous spacecraft clocks
. . . chronometers
. . timing devices
. titrimeters
. torquemeters
. turbulence meters
. vibration meters
. . seismographs
. . . lunar seismographs
. viscometers
. voltmeters
. . millivoltmeters
. wattmeters

RT aircraft instruments
automatic control
automatic test equipment
bioinstrumentation
calibrating
circumsolar telescopes
control moment gyroscopes
controllers
∞ detectors
drag measurement
duochromators
electric bridges
electrical measurement
flight instruments
forest fire detection
Fraunhofer line discriminators
IMBLMS
instrument receivers
instrument transmitters
∞ instruments
international System of Units
laboratory equipment
landing instruments
large aperture seismic array
local scientific survey module
lunar rangefinding
∞ measurement
metrology
microinstrumentation
monitors
navigation instruments
∞ probes
propellant actuated instruments
radio probing
radio telemetry
rapid ballistics identification
recording instruments
remote sensors
rocket-borne instruments
Ronchi test
satellite instruments
∞ sensors
sodar
sound detecting and ranging
spacecraft instruments
synchroscopes
telemetry
∞ test equipment
transducers
ultrasonic scanners
Venturi tubes
Wheatstone bridges
wind tunnel calibration

mecamylamine
GS amines
. **mecamylamine**
terpenes
. **mecamylamine**

mechanical devices
RT cams
clamps
clips
clutches
∞ devices
∞ equipment
holders
jigs
levers
linkages
machine tools
∞ mechanism
mechanization
tools

mechanical drawings
USE **engineering drawings**

mechanical drives
UF *rotary drives*
GS **mechanical drives**
. magnetic tape transports
. propeller drive
. . helicopter propeller drive
. transmissions (machine elements)
RT clutches
counter-rotating wheels
coupling
couplings
∞ drives
∞ gear
gear teeth
gears
magnetoelectric media
∞ power transmission
shafts (machine elements)
vehicle wheels
wind tunnel drives
windmills (windpowered machines)

mechanical engineering
RT aeronautical engineering
aerospace engineering
∞ engineering
fluid flow
flywheels
furnaces
heat transfer
machine tools
∞ machinery
maintenance
materials handling
stress analysis
thermodynamics
vibration tests

mechanical fingers
USE **end effectors**

mechanical hands
USE **end effectors**

mechanical impedance
GS impedance
. **mechanical impedance**
RT attenuation
damping
friction
impedance measurement

mechanical measurement
SN (MEASUREMENT OF MECHANICAL PROPERTIES, QUANTITIES OR CONDITIONS)
GS **mechanical measurement**
. displacement measurement

. drag measurement
. flow measurement
. . particle image velocimetry
. friction measurement
. pressure measurement
. stress measurement
. . x ray stress measurement
. thrust measurement
. velocity measurement
. . particle image velocimetry
. . wind velocity measurement
. vibration measurement
. wind measurement
. . wind velocity measurement
RT accelerometers
acoustic measurement
deformeters
density measurement
depth measurement
dynamometers
extensometers
flowmeters
∞ measurement
strain gages
tensiometers
torquemeters
weight indicators

mechanical oscillators
GS oscillators
. mechanical oscillators
. . pendulums
. . . gyroscopic pendulums
RT electric choppers
harmonic oscillators
reciprocation
resonant vibration
vibration

mechanical properties
UF *material strength*
meteorite compression tests
strength of materials
GS mechanical properties
. brittleness
. bulk modulus
. cold strength
. compressibility
. compressive strength
. creep properties
. . creep rupture strength
. . shear creep
. . steady state creep
. . tensile creep
. creep strength
. dimensional stability
. . structural stability
. . . shell stability
. ductility
. earthquake resistance
. elastic properties
. . aeroelasticity
. . . aeroservoelasticity
. . . aerothermoelasticity
. . anelasticity
. . elastoplasticity
. . hydroelasticity
. . hypoelasticity
. . magnetostriction
. . modulus of elasticity
. . . dynamic modulus of elasticity
. . photoelasticity
. . . photoviscoelasticity
. . proportional limit
. . thermoelasticity
. . . aerothermoelasticity
. . viscoelasticity
. . . photoviscoelasticity
. . . thermoviscoelasticity
. electrostriction
. fatigue life
. fiber strength
. flexibility
. fracture strength
. . flexural strength
. hardness
. . Knoop hardness
. . microhardness
. . Rockwell hardness
. high strength
. impact strength
. malleability
. modular ratios
. notch strength
. piezoelectricity
. plastic properties
. . elastoplasticity
. . photoplasticity
. . superplasticity
. . thermoplasticity
. . viscoplasticity
. . yield point
. Poisson ratio
. resilience
. set
. shear properties
. . shear strength
. stiffness
. stress cycles
. stress ratio
. stress relaxation
. tensile properties
. . tensile strength
. thermal resistance
. toughness
. . notch sensitivity
. wear resistance
. . abrasion resistance
. weld strength
. yield strength
. . load carrying capacity
. . microyield strength
RT acoustic properties
aging (materials)
anisotropy
buoyancy
cast alloys
coefficients
compressing
compression loads
deformation
durability
elongation
fatigue (materials)
ferritic stainless steels
fiber orientation
flatness
∞ high resistance
hysteresis
impedance
interfacial tension
interference fit
internal friction
isotropy
J integral
∞ low resistance
∞ materials
∞ materials tests
∞ metallurgy
micromechanics
microporosity
peeling
permeability
∞ physical properties
propellant properties
∞ properties
radiation effects
reliability
∞ rigidity
roughness
ruggedness
shear strain
shear stress
shock resistance
solid mechanics
specifications
specimen geometry
strain rate
∞ strength
stress concentration
stresses
structural failure
supercooling
surface defects
surface properties
surface roughness
tearing
temperature inversions
textures
tolerances (mechanics)
triaxial stresses
triboluminescence
weathering

mechanical resonance
USE resonant vibration

mechanical shock
UF *jarring*
GS mechanical shock
. hydraulic shock
RT acceleration (physics)
high acceleration
hypervelocity impact
impact
impact acceleration
∞ shock
shock absorbers
shock resistance
shock spectra
shock waves
vibration

mechanical twinning
GS twinning
. mechanical twinning
RT crystal defects
crystal growth
crystal structure
work hardening

∞ **mechanics (physics)**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT celestial mechanics
classical mechanics
continuum mechanics
∞ dynamics
electromechanics
flight mechanics
fluid dynamics
fluid mechanics
fracture mechanics
gas dynamics
∞ hydraulics
hydrodynamics
kinematics
kinetics

loads (forces)
∞ mechanism
megamechanics
micromechanics
orbital mechanics
∞ physics
quantum mechanics
∞ science
solid mechanics
statics
statistical mechanics
virial theorem
Wigner coefficient

∞ mechanism
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ machinery
mechanical devices
∞ mechanics (physics)
∞ methodology

mechanization
RT ∞ automation
data processing
depersonalization
∞ machinery
man machine systems
mechanical devices
∞ operations
systems engineering
tooling
tools

mechanograms
GS measuring instruments
. mechanograms
medical equipment
. mechanograms
recording instruments
. mechanograms
RT muscular function

mechanoreceptors
DEF Nerve endings that react to mechanical stimuli, such as touch, tension, and acceleration.
GS anatomy
. sense organs
. . mechanoreceptors
receptors (physiology)
. mechanoreceptors
RT sensitometry

meclizine
GS halogen compounds
. chlorine compounds
. . meclizine
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azines
. . . . meclizine
pyrazines
. azines
. . meclizine

media
SN (EXCLUDES COMMUNICATION TECHNIQUES)
GS media
. anisotropic media
. . anisotropic fluids
. elastic media
. intergalactic media
. interplanetary medium
. . interplanetary dust
. . . meteoroid dust clouds
. . . zodiacal dust
. . interplanetary gas
RT ∞ channels

median (statistics)
RT average
distribution moments
errors
mean
mode (statistics)
normality
norms
quality control
statistical analysis
∞ tests

mediastinum
RT septum
tissues (biology)

mediation
RT labor
management planning

medical electronics
RT echoencephalography
electrocardiography
electroencephalography
electromyography
∞ electronics
electroplethysmography
electroretinography
telemedicine

medical equipment
GS medical equipment
. artificial cardiac pacemaker
. artificial heart valves
. blood pumps
. cardiotachometers
. endoscopes
. mechanograms
. prosthetic devices
. . artificial ears
. respirators
. stethoscopes
. stretchers
. surgical instruments
. syringes
. tourniquets
. x ray apparatus
. . fixiscopes
. . x ray tubes
RT cardiography
dentistry
diagnosis
echoencephalography
electroencephalography
emergency life sustaining systems
∞ equipment
first aid
fluoroscopy
hospitals
IMBLMS
∞ medicine
microtomy
mobile quarantine facility
telemedicine
therapy

medical personnel
GS personnel
. medical personnel
. . flight nurses
. . physicians
. . surgeons
. . . flight surgeons
RT ∞ medicine

medical phenomena
RT diving (underwater)
phenomenology

medical science
GS medical science
. aerospace medicine
. . aviation psychology
. . space psychology
. anesthesiology
. cardiology
. clinical medicine
. dentistry
. dermatology
. endocrinology
. epidemiology
. geriatrics
. gynecology
. histology
. immunology
. neurology
. nuclear medicine
. . radiobiology
. ophthalmology
. orthopedics
. otolaryngology
. otology
. pathology
. . human pathology
. pharmacology
. . psychopharmacology
. psychiatry
. . neuropsychiatry
. . social psychiatry
. radiology
. radiopathology
. sports medicine
. surgery
. . labyrinthectomy
. symptomology
. urology
. veterinary medicine
RT ∞ biology
diagnosis
diseases
first aid
∞ medicine
optometry
pneumothorax
psychopharmacology
radiation therapy
∞ science
telemedicine
transfusion

medical services
GS services
. medical services
RT ambulances
first aid
intravenous procedures
mobile quarantine facility
public health
telemedicine

∞ medicine
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aerospace medicine
clinical medicine
drugs
medical equipment
medical personnel
medical science
neuropsychiatry
pharmacology
psychopharmacology

radiobiology
radiology
veterinary medicine

Mediterranean Sea
GS seas
. Mediterranean Sea
. . Adriatic Sea
RT Cyprus
Gibraltar
Malta
Rhone Delta (France)
Sicily

medium scale integration
GS circuits
. integrated circuits
. . medium scale integration
microelectronics
. medium scale integration
RT electronic packaging
large scale integration
molecular electronics
printed circuits

meetings
USE conferences

megalopolises
RT cities
communities
demography
industrial areas
regional planning
residential areas
rural areas
suburban areas
urban development
urban transportation

megamechanics
RT large space structures
∞ mechanics (physics)
structural analysis
structural engineering
trusses

Meissner effect
USE diamagnetism
superconductivity

melamine
GS amines
. melamine
RT resins

melanin
GS biopolymers
. proteins
. . melanin
organic compounds
. proteins
. . melanin
pigments
. melanin
RT dopa
skin (anatomy)

melanoidin
GS acids
. amino acids
. . melanoidin
organic compounds
. amino acids
. . melanoidin

Mellin transforms
GS functions (mathematics)
. Mellin transforms
RT integral equations
kernel functions

melt spinning
DEF A material process by which polymers such as nylon and polyesters and glass are melted to permit extrusion into fibers through spinnerets.
GS crystallization
. melt spinning
melts (crystal growth)
. melt spinning
solidification
. melt spinning
RT ∞ metallurgy
phase transformations

melting
UF *remelting*
thawing
GS phase transformations
. melting
. . arc melting
. . fusion (melting)
. . levitation melting
. . vacuum melting
. . zone melting
RT ablation
aufeis (ice)
burnthrough (failure)
casting
coal liquefaction
containerless melts
cooling
defrosting
deicing
drop transfer
extraction
freezing
furnaces
heat of fusion
heating
ice prevention
impact melts
induction heating
injection molding
liquefaction
liquid metals
liquid-solid interfaces
melts (crystal growth)
metal cutting
metal foams
∞ metallurgy
molds
phase change materials
pseudopotentials
∞ separation
smelting
solar furnaces
spilling

melting points
DEF liquidus and solidus coincide at an invariant point. In a phase diagram, the temperature at which the
UF *freezing points*
GS thermodynamic properties
. thermophysical properties
. . melting points
RT high temperature tests
liquid phases
liquidus
low temperature tests
phase diagrams
reaction bonding
solid solutions
solid state
solidification
solidified gases
specific heat
temperature
transition temperature

melts (crystal growth)
DEF Molten substances from which crystals are formed during the cooling or solidifying process.
GS melts (crystal growth)
. containerless melts
. impact melts
. melt spinning
RT atomic structure
crystal growth
crystallization
float zones
Marangoni convection
melting
semiconductors (materials)

MEM (excursion module)
USE Mars Excursion Module

membrane analogy
USE membrane structures
structural analysis

membrane structures
DEF Shell structures, often pressurized, that do not take wall bending or compression loads. Used for membrane analogy.
UF *membrane analogy*
GS membranes
. membrane structures
. . skin (structural member)
structural members
. membrane structures
. . skin (structural member)
RT diaphragms (mechanics)
metal shells
perforated shells
Scotchlite (trademark)
∞ sheets
shells (structural forms)
∞ structures
thin walled shells
webs (supports)

membrane theory
USE structural analysis

membranes
UF *webs (membranes)*
GS membranes
. cell membranes (biology)
. choroid membranes
. conjunctiva
. epicardium
. ion exchange membrane electrolytes
. membrane structures
. . skin (structural member)
. peritoneum
. pleurae
RT ∞ diaphragms
diaphragms (mechanics)
∞ films
jet membrane process
∞ layers
osmosis
reverse osmosis
septum
∞ sheets
shells (structural forms)
skin (anatomy)
∞ webs
webs (sheets)

webs (supports)

memory
SN (LIMITED TO SENTIENT ORGANISMS—EXCLUDES COMPUTER STORAGE DEVICES AND PLASTIC MEMORY)
RT education
learning
mnemonics
recognition
retention (psychology)

memory (computers)
DEF The component of a computer, control system, guidance system, instrumented satellite, or the like, designed to provide ready access to data or instructions previously recorded so as to make them bear upon an immediate problem, such as the guidance of a physical object, or the analysis and reduction of data.
GS memory (computers)
. random access memory
. . core storage
. distributed memory
RT architecture (computers)
chips (memory devices)
computer design
computer storage devices
computers
hole burning
magnetic disks
video disks

mendelevium
GS chemical elements
. actinide series
. . transuranium elements
. . . mendelevium
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . mendelevium
metals
. actinide series
. . transuranium elements
. . . mendelevium

meningitis
GS diseases
. infectious diseases
. . meningitis
RT acquired immunodeficiency syndrome
bacterial diseases
viral diseases

meniscl
GS liquid surfaces
. meniscl
RT curves (geometry)
liquid–gas mixtures
liquid–solid interfaces
liquid–vapor interfaces
∞ surfaces

menstruation
RT females
ovaries
physiology

mental health
GS health
. mental health
RT human performance
intelligence
neuropsychiatry
psychotherapy
Rorschach tests
schizophrenia

mental performance
RT abilities
cognitive psychology
consciousness
human performance
hypemesa
inspiration
intellect
intelligence
intelligence tests
irrationality
lies
operator performance
∞ performance
psychomotor performance
stress (psychology)
workloads (psychophysiology)

mental stress
USE stress (psychology)

menthol
GS organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . menthol
. hydrocarbons
. . cyclic hydrocarbons
. . . menthol
terpenes
. menthol

meprobamate
GS esters
. meprobamate

mercaptan
USE thiols

mercapto compounds
USE thiols

Mercator projection
DEF An equatorial, cylindrical, conformal map projection derived by mathematical analysis (not geometrically) in which the equator is represented by a straight line true to scale. The meridians are represented by parallel straight lines perpendicular to the equator and equally spaced according to their distance apart at the equator. The parallels are represented by straight lines perpendicular to the meridians and parallel with (and the same length as) the equator. The parallels are spaced so as to achieve conformality, their spacing increasing rapidly with their distance from the equator so that at all places the degrees of latitude and longitude have the same ratio to each other as to the sphere itself. This results in greater distortion of distances, areas, and shapes in the polar regions (above 80 deg. latitude). The scale is increasingly poleward as the secant of the latitude. Because any line of constant direction (azimuth) on the sphere is truly represented on the projection by a straight line, the Mercator projection is of great value in navigation. It is used for hydrographic charts, and also to show geographic variations of some physical property (such as magnetic declination) or to plot trajectories of Earth satellites in oblique orbits. It is named after Gerhardus Mercator (1512–1594), a Flemish mathematician and geographer, whose world map of 1569 used this projection.
GS geometry
. Euclidean geometry
. . analytic geometry
. . . Mercator projection
. . projective geometry
. . . Mercator projection
RT maps

Mercure aircraft
GS transport aircraft
. short haul aircraft
. . Mercure aircraft
RT ∞ aircraft
cargo aircraft
passenger aircraft

mercury (metal)
UF *liquid mercury*
GS chemical elements
. mercury (metal)
. . mercury isotopes
. . mercury vapor
liquids
. liquid metals
. . mercury (metal)
. . . mercury isotopes
. . . mercury vapor
metals
. liquid metals
. . mercury (metal)
. . . mercury isotopes
. . . mercury vapor
. transition metals
. . mercury (metal)
. . . mercury isotopes
. . . mercury vapor

Mercury (planet)
GS celestial bodies
. planets
. . terrestrial planets
. . . Mercury (planet)
RT Mercury atmosphere
Mercury surface
planetary craters

mercury alloys
GS alloys
. mercury alloys
. . mercury amalgams

mercury amalgams
UF *amalgams*
GS alloys
. mercury alloys
. . mercury amalgams

mercury arcs
GS electric current
. electric discharges
. . electric arcs
. . . mercury arcs
RT arc lamps
metallic plasmas
rectifiers

Mercury atmosphere
GS environments
. extraterrestrial environments
. . planetary environments
. . . planetary atmospheres
. . . . Mercury atmosphere
RT Mercury (planet)
Mercury surface
planetary meteorology

mercury cadmium telluridse
DEF Compounds of tellurium exhibiting photovoltaic characteristics and used for photodiodes and photodetectors in the 3 to 12 microm-

ster wavelengths at cryogenic temperatures. Used for cadmium mercury tellurides.
UF *cadmium mercury tellurides*
GS chalcogenides
. tellurides
. . mercury tellurides
. . . mercury cadmium tellurides
mercury compounds
. mercury tellurides
. . mercury cadmium tellurides
tellurium compounds
. tellurides
. . mercury tellurides
. . . mercury cadmium tellurides
RT infrared detectors
photoconductivity
photoconductors
photodiodes

mercury compounds
GS mercury compounds
. mercury oxides
. mercury tellurides
. . mercury cadmium tellurides
RT ∞ chemical compounds
Group 2B compounds
∞ metal compounds

Mercury flights
GS space flight
. manned space flight
. . Mercury flights
. . . Mercury MA-1 flight
. . . Mercury MA-2 flight
. . . Mercury MA-3 flight
. . . Mercury MA-4 flight
. . . Mercury MA-5 flight
. . . Mercury MA-6 flight
. . . Mercury MA-7 flight
. . . Mercury MA-8 flight
. . . Mercury MA-9 flight
. . . Mercury MR-1 flight
. . . Mercury MR-2 flight
. . . Mercury MR-3 flight
. . . Mercury MR-4 flight
RT Atlas launch vehicles
manned spacecraft
space capsules

mercury ion engines
DEF Machines providing thrust by expelling accelerated or high velocity mercury ions and often using energy provided by nuclear reactors.
GS engines
. rocket engines
. . electric rocket engines
. . . ion engines
. . . . mercury ion engines
RT electrostatic engines
nuclear propulsion
nuclear rocket engines
plasma engines

mercury isotopes
GS chemical elements
. mercury (metal)
. . mercury isotopes
. nuclides
. . isotopes
. . . mercury isotopes
liquids
. liquid metals
. . mercury (metal)
. . . mercury isotopes
metals
. liquid metals
. . mercury (metal)
. . . mercury isotopes
. transition metals
. . mercury (metal)
. . . mercury isotopes

mercury lamps
GS lighting equipment
. luminaires
. . mercury lamps
RT light sources
phosphors
sterilization
xenon lamps

Mercury MA-1 flight
GS space flight
. manned space flight
. . Mercury flights
. . . Mercury MA-1 flight
RT Atlas launch vehicles

Mercury MA-2 flight
UF *MA-2 mission*
GS space flight
. manned space flight
. . Mercury flights
. . . Mercury MA-2 flight
RT Atlas launch vehicles
Faith 7

Mercury MA-3 flight
UF *MA-3 flight*
GS space flight
. manned space flight
. . Mercury flights
. . . Mercury MA-3 flight
RT Atlas launch vehicles

Mercury MA-4 flight
UF *MA-4 flight*
GS space flight
. manned space flight
. . Mercury flights
. . . Mercury MA-4 flight
RT Atlas launch vehicles

Mercury MA-5 flight
UF *MA-5 flight*
GS space flight
. manned space flight
. . Mercury flights
. . . Mercury MA-5 flight
RT Atlas launch vehicles

Mercury MA-6 flight
GS space flight
. manned space flight
. . Mercury flights
. . . Mercury MA-6 flight
RT Atlas launch vehicles
Friendship 7

Mercury MA-7 flight
GS space flight
. manned space flight
. . Mercury flights
. . . Mercury MA-7 flight
RT Atlas launch vehicles
Aurora 7

Mercury MA-8 flight
UF *MA-8 flight*
GS space flight
. manned space flight
. . Mercury flights
. . . Mercury MA-8 flight
RT Atlas launch vehicles
SIGMA 7

Mercury MA-9 flight
UF *MA-9 flight*
GS space flight
. manned space flight
. . Mercury flights
. . . Mercury MA-9 flight
RT Atlas launch vehicles
Faith 7

Mercury MR-1 flight
GS space flight
. manned space flight
. . Mercury flights
. . . Mercury MR-1 flight

Mercury MR-2 flight
GS space flight
. manned space flight
. . Mercury flights
. . . Mercury MR-2 flight

Mercury MR-3 flight
UF *MR-3 flight*
GS space flight
. manned space flight
. . Mercury flights
. . . Mercury MR-3 flight

Mercury MR-4 flight
GS space flight
. manned space flight
. . Mercury flights
. . . Mercury MR-4 flight

mercury oxides
GS chalcogenides
. oxides
. . metal oxides
. . . mercury oxides
mercury compounds
. mercury oxides

Mercury project
GS programs
. NASA programs
. . NASA space programs
. . . Mercury project
. projects
. . Mercury project
. space programs
. . NASA space programs
. . . Mercury project
RT Apollo project
Atlas launch vehicles
Gemini project
Little Joe 2 launch vehicle
manned space flight
manned spacecraft

Mercury spacecraft
GS manned spacecraft
. Mercury spacecraft
. . Aurora 7
. . Faith 7
. . Friendship 7
. . SIGMA 7
reentry vehicles
. recoverable spacecraft
. . Mercury spacecraft
. . . Aurora 7
. . . Faith 7
. . . Friendship 7
. . . SIGMA 7
soft landing spacecraft
. Mercury spacecraft
. . Aurora 7
. . Faith 7
. . Friendship 7

. . SIGMA 7
space capsules
. Mercury spacecraft
. . Aurora 7
. . Faith 7
. . Friendship 7
. . SIGMA 7

Mercury surface
DEF The surface of the planet Mercury.
GS planetary surfaces
. Mercury surface
RT extraterrestrial environments
Mercury (planet)
Mercury atmosphere
planetary craters
satellite surfaces
solar system
terrestrial planets

mercury tellurides
GS chalcogenides
. tellurides
. . mercury tellurides
. . . mercury cadmium tellurides
mercury compounds
. mercury tellurides
. . mercury cadmium tellurides
tellurium compounds
. tellurides
. . mercury tellurides
. . . mercury cadmium tellurides

mercury vapor
GS chemical elements
. mercury (metal)
. . mercury vapor
liquids
. liquid metals
. . mercury (metal)
. . . mercury vapor
metals
. liquid metals
. . mercury (metal)
. . . mercury vapor
. metal vapors
. . mercury vapor
. transition metals
. . mercury (metal)
. . . mercury vapor
vapors
. metal vapors
. . mercury vapor
RT cesium vapor
sodium vapor

merging routines
GS computer programs
. merging routines
RT ∞ routines

meridional flow
GS fluid flow
. gas flow
. . air flow
. . . air currents
. . . . meridional flow
RT atmospheric circulation
flow geometry
wind (meteorology)
wind direction
zonal flow (meteorology)

Merlin (helicopter)
USE **EH-101 helicopter**

meromorphic functions
GS analysis (mathematics)
. complex variables
. . meromorphic functions
. . . elliptic functions
. . . rational functions
functions (mathematics)
. meromorphic functions
. . elliptic functions
. . rational functions

Merritt Island (FL)
GS landforms
. islands
. . Merritt Island (FL)
RT Florida

merwinite
GS calcium compounds
. merwinite
magnesium compounds
. merwinite
minerals
. merwinite
silicon compounds
. silicates
. . merwinite

mesas
DEF Isolated, nearly level landmasses standing distinctly above the surrounding country, bounded by abrupt or steeply sloping erosion scarps on all sides, and capped by layers of resistant, nearly horizontal rock (often lava). Less strictly, very broad, flat topped, usually isolated hills or mountains of moderate height bounded on at least one side by a steep cliff or slope and representing an erosion remnant. Mesas are similar to, but have more summit area than buttes and are common topographical features in arid and semiarid regions of the United States. Mesas are often considered broad terraces or comparatively flat plateaus along river valleys. They are marked by an abrupt slope or escarpment on one side.
GS landforms
. terraces (landforms)
. . plateaus
. . . mesas
. . . . buttes
RT flats (landforms)
highlands
mountains

MESFETs
USE **field effect transistors**

mesh
RT fabrics
∞ grids
strands
webbing
∞ webs

mesh (mathematics)
USE **computational grids**

mesh generation (mathematics)
USE **grid generation (mathematics)**

mesitylene
GS organic compounds
. hydrocarbons
. . mesitylene

mesometeorology
GS meteorology
. mesometeorology
RT aeronomy
lower atmosphere
micrometeorology

meson resonance
GS particles
. elementary particles
. . bosons
. . . mesons
. . . . meson resonance
. . . . . X mesons
. . fermions
. . . meson resonance
. . . . X mesons
. . hadrons
. . . mesons
. . . . meson resonance
. . . . . X mesons
. nuclear particles
. . bosons
. . . mesons
. . . . meson resonance
. . . . . X mesons
resonance
. meson resonance
. . X mesons
RT baryons
hyperons

meson–meson interactions
GS particle interactions
. elementary particle interactions
. . meson–meson interactions
RT electromagnetic interactions
∞ interactions

meson–nucleon interactions
GS particle interactions
. elementary particle interactions
. . meson–nucleon interactions
RT charged particles
∞ interactions
mesons
Yukawa potential

mesons
DEF In the classification of subatomic particles by mass, the second lightest of such particles. Their mass is intermediate between that of the lepton and the nucleon.
GS particles
. elementary particles
. . bosons
. . . mesons
. . . . eta–mesons
. . . . hyperons
. . . . . xi hyperons
. . . . kaons
. . . . meson resonance
. . . . . X mesons
. . . . muons
. . . . omega–mesons
. . . . pions
. . . . vector mesons
. . . . . rho–mesons
. . . . . sigma–mesons
. . hadrons
. . . mesons
. . . . eta–mesons
. . . . hyperons
. . . . . xi hyperons
. . . . kaons
. . . . meson resonance
. . . . . X mesons
. . . . muons
. . . . omega–mesons
. . . . pions
. . . . vector mesons
. . . . . rho–mesons
. . . . . sigma–mesons
. nuclear particles

. . bosons
. . . mesons
. . . . eta–mesons
. . . . hyperons
. . . . . xi hyperons
. . . . kaons
. . . . meson resonance
. . . . . X mesons
. . . . muons
. . . . omega–mesons
. . . . pions
. . . . vector mesons
. . . . . rho–mesons
. . . . . sigma–mesons
RT baryons
boson fields
charged particles
corpuscular radiation
cosmic rays
gluons
leptons
meson–nucleon interactions
muonium
Pomeranchuk theorem
strangeness

mesopause
SN (ALTITUDE APPROXIMATELY 80 KM)
DEF The base of the inversion at the top of the mesosphere, usually found at 80 to 85 kilometers.
GS Earth atmosphere
. middle atmosphere
. . mesosphere
. . . mesopause
RT stratopause

mesophiles
RT microorganisms
psychrophiles
thermophiles

mesoscale phenomena
DEF Meteorological phenomena extending approximately one to a hundred kilometers (mesoscale cloud patterns, for example).
GS mesoscale phenomena
. jet streams (meteorology)
RT arc clouds
meteorology
phenomenology
wind (meteorology)

mesosphere
SN (ALTITUDE RANGE BETWEEN APPROXIMATELY 45 AND 80 KM)
DEF The atmospheric shell, in which temperature generally decreases with heights, extending from the stratopause at about 50 to 55 kilometers to the mesopause at about 80 to 85 kilometers.
GS Earth atmosphere
. middle atmosphere
. . mesosphere
. . . mesopause
RT chemosphere
Earth ionosphere
homosphere
Solar Mesosphere Explorer
stratopause

Mesozoic Era
(added June 1989)
DEF An era of geologic time, from the end of the Paleozoic Era to the beginning of the Cenozoic Era, or from about 225 to about 65 million years ago.
GS Mesozoic Era
. Cretaceous Period
RT Cretaceous–Tertiary boundary
geochronology
paleontology
Paleozoic Era

message processing
DEF In communication operations, the acceptance, preparation for transmission, receipt and/or delivery of a series of words or symbols intended for conveying information.
RT automatic repeat request
communicating
communication
cryptography
information flow
messages
packet transmission
∞ processing
semantics
signal processing
signal transmission
symbols

messages
GS communicating
. information dissemination
. . messages
RT automatic repeat request
communication theory
information theory
intelligibility
message processing
semantics
sentences
signal transmission
∞ signals
syllables
symbols
vocoders
words (language)

messenger RNA
USE ribonucleic acids

Messerschmitt ME P–160 aircraft
USE P–160 aircraft

Messerschmitt ME P–308 aircraft
USE P–308 aircraft

metabolic diseases
GS diseases
. metabolic diseases
RT metabolism

metabolic wastes
GS wastes
. metabolic wastes
. . human wastes
. . . feces
. . . urine
RT activated sludge
air pollution
carbon dioxide
composting
environment effects
environment pollution
environmental surveys
expired air
liquid wastes
manures
metabolites
organic wastes (fuel conversion)
pollution
sewage
sewers
solid wastes
waste disposal

metabolism
DEF The sum of all physical and chemical processes by which living organized substance is produced and maintained and by which energy is made available for the use of the organism.
GS metabolism
. adrenal metabolism
. ascorbic acid metabolism
. calcium metabolism
. carbohydrate metabolism
. . hyperglycemia
. . hypoglycemia
. catabolism
. electrolyte metabolism
. enzyme activity
. . fermentation
. hormone metabolisms
. hydrogen metabolism
. hypometabolism
. mineral metabolism
. nitrogen metabolism
. oxygen metabolism
. phosphorus metabolism
. protein metabolism
. . lipid metabolism
RT caloric requirements
enzymology
heterotrophs
homeostasis
Krebs cycle
metabolic diseases
metabolites
nutrition
obesity
osteoporosis
oxygen consumption
physiology
respiration
secretions
thermoregulation

metabolites
DEF Products of biological synthesis and/or metabolism.
RT biochemistry
biosynthesis
metabolic wastes
metabolism
organic compounds

metagalaxy
USE universe

metal air batteries
GS electric generators
. direct power generators
. . primary batteries
. . . metal air batteries
. . . . zinc–oxygen batteries
electrochemical cells
. electric batteries
. . primary batteries
. . . metal air batteries
. . . . zinc–oxygen batteries
RT dry cells
storage batteries

metal bonding
GS bonding
. metal bonding
. . metal–metal bonding
RT adhesion
adhesive bonding
bimetals
brazing
diffusion welding

explosive welding
heat affected zone
joints (junctions)
laminates
resin bonding
soldering
welding

metal clusters
(added January 1994)
DEF Bonded aggregations of like metal atoms.
RT agglomeration
atomic clusters
chemisorption
clumps
∞ clusters
metals
molecular clusters
nucleation

metal coatings
SN (COATINGS CONSISTING OF METAL)
GS coatings
. **metal coatings**
. . aluminum coatings
. . gold coatings
. . nickel coatings
. . zinc coatings
RT anodic stripping
antiradar coatings
ceramic coatings
cladding
corrosion
corrosion prevention
deposition
electroless deposition
hot corrosion
ion plating
lacquers
magnetron sputtering
metallizing
∞ metallurgy
metals
oxides
paints
∞ plates
plating
primers (coatings)
protective coatings
sprayed coatings

metal combustion
GS combustion
. **metal combustion**
RT fuel combustion
gas–metal interactions
metals
oxidation
propellant combustion
pyrophoric materials
solid propellant combustion
solid propellent ignition

∞ **metal compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ alkali metal compounds
aluminum compounds
ammines
antimony compounds
barium compounds
beryllium compounds
bismuth compounds
cadmium compounds
calcium compounds
cerium compounds
cesium compounds
∞ chemical compounds
chromium compounds
cobalt compounds
copper compounds
dysprosium compounds
erbium compounds
europium compounds
gallium compounds
germanium compounds
hafnium compounds
indium compounds
iridium compounds
iron compounds
lanthanum compounds
lead compounds
lead organic compounds
lithium compounds
lithium iodates
lutetium compounds
magnesium compounds
manganese compounds
mercury compounds
metal fluorides
metal halides
metal hydrides
metal oxides
metals
molybdenum compounds
neodymium compounds
neptunium compounds
nickel compounds
niobium compounds
organic aluminum compounds
organic germanium compounds
organic lithium compounds
organic tin compounds
organometallic compounds
osmium compounds
platinum compounds
plutonium compounds
potassium compounds
praseodymium compounds
protactinium compounds
rare earth compounds
refractory materials
rhenium compounds
rubidium compounds
ruthenium compounds
samarium compounds
scandium compounds
silver compounds
sodium compounds
strontium compounds
strontium oxides
tantalum compounds
technetium compounds
thallium compounds
thorium compounds
thulium compounds
tin compounds
titanium compounds
tungsten compounds
uranium compounds
vanadium compounds
vanadyl compounds
ytterbium compounds
yttrium compounds
zinc compounds
zirconium compounds

metal corrosion
USE **corrosion**

metal crystals
GS crystals
. **metal crystals**
RT crystal lattices
crystal structure
metallography
metals

metal cutting
GS cutting
. **metal cutting**
RT countersinking
grinding (material removal)
knurling
laser cutting
machine tools
machining
melting
micromachining
milling (machining)
perforating
planing
plasma arc cutting
scarfing
shearing
slicing
spark machining
spiking

metal drawing
GS forming techniques
. **metal drawing**
metal working
. **metal drawing**
RT bulging
bundle drawing
cold drawing
cold working
∞ drawing
ductility
hot working
magnetic forming
stretch forming

metal fatigue
GS fatigue (materials)
. **metal fatigue**
RT bending fatigue
Coffin–Manson law
crack closure
crack initiation
crack propagation
fracturing
grain size
inelastic stress
retirement for cause
rupturing
Segre characteristic
short cracks
S–N diagrams
stress corrosion
stress corrosion cracking
thermal fatigue
transgranular corrosion

metal fibers
GS fibers
. **metal fibers**
RT Borsic (tradename)
fiber composites
filament winding
reinforcing fibers

metal films
RT coatings
diamond films
∞ films
metallizing
metals
nickel coatings

pickling (metallurgy)
sputtering gages
thin films

metal finishing
GS **metal finishing**
. electropolishing
. peening
. . shot peening
RT cleaning
coating
coatings
descaling
pickling (metallurgy)
plating
surface finishing

metal fluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . **metal fluorides**
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. halides
. . fluorides
. . . **metal fluorides**
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . **metal halides**
. . . . **metal fluorides**
. . . . . aluminum fluorides
. . . . . beryllium fluorides
. . . . . cadmium fluorides
. . . . . calcium fluorides
. . . . . fluorspar
. . . . . cesium fluorides
. . . . . chromium fluorides
. . . . . cobalt fluorides
. . . . . copper fluorides
. . . . . lanthanum fluorides
. . . . . lithium fluorides
. . . . . magnesium fluorides
. . . . . nickel fluorides
. . . . . plutonium fluorides
. . . . . protactinium fluorides
. . . . . sodium fluorides
. . . . . strontium fluorides
. . . . . thorium fluorides
. . . . . tungsten fluorides
. . . . . uranium fluorides
. . . . . zinc fluorides
RT ∞ metal compounds

metal foams
DEF Foamed materials formed under low gravity conditions in space from sputtered metal deposits. This experimental space processing was completed in the second NASA SPAR flight.
GS foams
. **metal foams**
RT bubbles
foaming
low gravity manufacturing
∞ materials science
melting
∞ metallurgy
Space Processing Applications Rocket

metal foils
GS foils (materials)
. **metal foils**
RT honeycomb structures
metals
multilayer insulation
∞ sheets

metal forging
USE **forging**

metal forming
USE **forming techniques**
metal working

metal fuels
GS fuels
. chemical fuels
. . **metal fuels**
RT aluminum compounds
beryllium compounds
boron compounds
cesium compounds
gelled propellants
hybrid propellants
lithium compounds
metals
slurry propellants
solid propellants

metal grinding
GS grinding (material removal)
. **metal grinding**
RT forming techniques
grinding machines
surface finishing

metal halides
GS halogen compounds
. halides
. . **metal halides**
. . . alkali halides
. . . . cesium halides
. . . . . cesium bromides
. . . . . cesium fluorides
. . . . . cesium iodides
. . . . potassium iodides
. . . . sodium bromides
. . . . sodium chlorides
. . . . sodium fluorides
. . . . sodium iodides
. . . aluminum chlorides
. . . barium fluorides
. . . beryllium chlorides
. . . cadmium chlorides
. . . calcium chlorides
. . . chromium bromides
. . . copper chlorides
. . . hafnium iodides
. . . iron chlorides
. . . lanthanum chlorides
. . . lead chlorides
. . . lithium chlorides
. . . magnesium bromides
. . . metal fluorides
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. . . . . fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . niobium iodides
. . . potassium bromides
. . . potassium chlorides
. . . silver halides
. . . . silver bromides
. . . . silver chlorides
. . . . silver iodides
. . . strontium bromides
. . . technetium fluorides
. . . titanium chlorides
. . . tungsten halides
. . . . tungsten chlorides
. . . . tungsten fluorides
. . . zinc chlorides
. . . zirconium iodides
RT ∞ metal compounds

metal hardening
USE **hardening (materials)**

metal hydrides
UF *plumbane*
GS hydrogen compounds
. hydrides
. . **metal hydrides**
. . . aluminum hydrides
. . . . aluminum borohydrides
. . . beryllium hydrides
. . . cesium hydrides
. . . lithium hydrides
. . . . lithium aluminum hydrides
. . . potassium hydrides
. . . sodium hydrides
RT ∞ metal compounds

metal insulator semiconductors
USE **MIS (semiconductors)**

metal ions
GS ions
. **metal ions**
. . ferric ions
. . manganese ions
RT barium ion clouds
cations
crystal field theory
ion implantation
ion plating
metals
positive ions

metal joints
GS joints (junctions)
. **metal joints**
. . soldered joints
. . welded joints
. . . spot welds
RT butt joints
explosive welding
lap joints
riveted joints
seams (joints)

metal matrix composites
GS composite materials
. **metal matrix composites**
. . aluminum boron composites
. . aluminum graphite composites
. . Borsic (tradename)
. . eutectic composites
RT aramid fiber composites
boron fibers
chemical compatibility
crack bridging
electrodeposition
fiber composites
fiber pullout
fibers
functionally gradient materials
hybrid composites
∞ materials
∞ matrices
matrix materials
monotectic alloys
particulate reinforced composites
plasma spraying
powder metallurgy
reinforcing fibers
resin matrix composites
squeeze casting
whisker composites

metal nitrides
GS nitrogen compounds
. nitrides
. . **metal nitrides**
. . . aluminum nitrides
. . . beryllium nitrides
. . . gallium nitrides
. . . tantalum nitrides
. . . titanium nitrides
. . . zirconium nitrides
RT transition metals

metal organic chemical vapor deposition

metal oxide semiconductors
UF *MOS (semiconductors)*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **metal oxide semiconductors**
. . . . CMOS
. . . . ITO (semiconductors)
. . . . SOS (semiconductors)
semiconductors (materials)
. **metal oxide semiconductors**
. . CMOS
. . ITO (semiconductors)
. . SOS (semiconductors)
RT capacitance-voltage characteristics
ion implantation
rectifiers
SOI (semiconductors)

metal oxides
GS chalcogenides
. oxides
. . **metal oxides**
. . . alkaline earth oxides
. . . . barium oxides
. . . . beryllium oxides
. . . . . alexandrite
. . . . calcium oxides
. . . . . akermanite
. . . . magnesium oxides
. . . . . akermanite
. . . . . periclase
. . . aluminum oxides
. . . . alexandrite
. . . . sapphire
. . . bismuth oxides
. . . cerium oxides
. . . cesium oxides
. . . chromium oxides
. . . cobalt oxides
. . . copper oxides
. . . gallium oxides
. . . hafnium oxides
. . . iron oxides
. . . . hematite
. . . . ilmenite
. . . . magnetite
. . . lanthanum oxides
. . . lead oxides
. . . lithium oxides
. . . manganese oxides
. . . . Hopcalite (trademark)
. . . mercury oxides
. . . mixed oxides
. . . . BSCCO superconductors
. . . . YBCO superconductors
. . . molybdenum oxides
. . . nickel oxides
. . . niobium oxides
. . . platinum oxides
. . . plutonium oxides
. . . potassium oxides
. . . scandium oxides
. . . silver oxides
. . . sodium peroxides
. . . strontium oxides
. . . tantalum oxides
. . . thorium oxides
. . . tin oxides
. . . titanium oxides
. . . . anatase
. . . . ilmenite
. . . . rutile
. . . tungsten oxides
. . . . scheelite
. . . uranium oxides
. . . vanadium oxides
. . . yttrium oxides
. . . zinc oxides
. . . zirconium oxides
. . . . yttria-stabilized zirconia
RT cathodic coatings
high temperature superconductors
∞ metal compounds
oxide films
vanadates

metal particles
GS particles
. **metal particles**
. . metal powder
. . . platinum black
. . . powdered aluminum
. . . . sintered aluminum powder
RT particulate reinforced composites
powder metallurgy
scrap
sputtering

metal plates
UF *plate (metal)*
GS structural members
. plates (structural members)
. . **metal plates**
. . . boiler plate
RT armor
bars
billets
flanges
flat plates
girder webs
parallel plates
∞ plates
rectangular plates
slabs
thick plates
thin plates

metal polishing
UF *polished metals*
GS polishing
. **metal polishing**
. . electropolishing
RT cleaning
surface finishing

metal powder
UF *powdered metals*
GS particles
. **metal particles**
. . **metal powder**
. . . platinum black
. . . powdered aluminum
. . . . sintered aluminum powder
. powder (particles)
. . **metal powder**
. . . platinum black
. . . powdered aluminum
. . . . sintered aluminum powder
RT atomizing
bearing alloys
comminution
compressibility
compressing
electrodeposition
flakes
liquid phase sintering
metals
mixing
porous materials
powder metallurgy
reduction (chemistry)
sintering
size separation

metal propellants
GS propellants
. rocket propellants
. . solid rocket propellants
. . . **metal propellants**
. solid propellants
. . solid rocket propellants
. . . **metal propellants**
RT aluminum compounds

beryllium compounds
boron compounds
gelled propellants
gelled rocket propellants
hybrid propellants
monopropellants
slurry propellants

metal sheets
UF *sheet metal*
RT plates (structural members)
∞ **sheets**

metal shells
GS **shells (structural forms)**
. **metal shells**
RT circular shells
cylindrical shells
hemispherical shells
hulls (structures)
membrane structures
orthotropic shells
reinforced shells
skin (structural member)
spherical shells
thin walled shells
toroidal shells

metal spinning
UF *spin forging*
spinning (metallurgy)
GS forming techniques
. **metal spinning**
. . hydrospinning
metal working
. **metal spinning**
. . hydrospinning
spin
. **metal spinning**
. . hydrospinning
RT cold working
extruding
hot working

metal spraying
GS spraying
. **metal spraying**
RT arc spraying
coating
coatings
flame spraying
metallizing
surface finishing

metal strips
RT billets
ribbons
strakes
∞ strip
strip transmission lines

metal surfaces
RT crack initiation
crystal surfaces
erosion
gas-solid interfaces
liquid-solid interfaces
oxide films
solid surfaces
surface finishing
surface properties
surface reactions
∞ surfaces

metal vapor lasers
DEF Stimulated emission devices, the active materials of which are vaporized metals.
GS stimulated emission devices
. lasers
. . **metal vapor lasers**
RT laser materials
laser microscopy
optical pumping

metal vapors
GS metals
. **metal vapors**
. . mercury vapor
. . sodium vapor
vapors
. **metal vapors**
. . mercury vapor
. . sodium vapor
RT alkali metals
alkali vapor lamps
gas–metal interactions
heat transfer
liquid metals
vapor deposition

metal whisker reinforcement
USE **whisker composites**

metal working
SN (METAL DEFORMATION FOR CHANGING SHAPE AND FOR PROPERTIES—EXCLUDES CASTING, CUTTING, DEPOSITION PROCESS AND MACHINING)
UF *metal forming*
GS **metal working**
. **auxforming**
. **bulging**
. **cladding**
. **coining**
. **explosive forming**
. **forging**
. **hydroforming**
. **magnetic forming**
. **metal drawing**
. **metal spinning**
. . hydrospinning
. **sizing (shaping)**
RT brakes (forming or bending)
∞ **breakdown**
casting
cold pressing
cold rolling
cold working
decarburization
deep drawing
dimpling
electrohydraulic forming
electromagnetic hammers
explosive welding
extruding
fastening
forming techniques
hardening (materials)
hot isostatic pressing
hot pressing
hot working
laser applications
laser machining
leveling
machining
malleability
∞ **metallurgy**
micromachining
peening
perforating
piercing
plasma arc cutting
pressing (forming)
pyrometallurgy
∞ reduction
roll forming
∞ rolling
shearing
shot peening
squeeze casting
stamping
stretch forming
stretching
superplastic forming
swaging
tempering
winding
work hardening

metal-barrier-metal junctions
USE **MBM junctions**

metal–gas systems
RT gas lubricants
gases
gas–metal interactions
metals
∞ systems
vapor phases

metal-insulator-metal diodes
USE **MIM diodes**

metal-insulator-metal semiconductors
USE **MIMI (semiconductors)**

metal–metal bonding
GS bonding
. **metal bonding**
. . **metal–metal bonding**
RT adhesive bonding
adhesives
diffusion welding
explosive welding
heat affected zone
inertia bonding
resin bonding
soldering
welding

metal–nitride–oxide–semiconductors
DEF Class of semiconductors utilizing silicon nitride and silicon oxide dielectrics.
GS electronic equipment
. solid state devices
. . **metal–nitride–oxide–semiconductors**
semiconductors (materials)
. **metal–nitride–oxide–semiconductors**
RT chips (memory devices)

metal–nitride–oxide–silicon
UF *MNOS*
GS semiconductors (materials)
. **metal–nitride–oxide–silicon**

metal-oxide-metal semiconductors
USE **MOM (semiconductors)**

metal-semiconductor-metal semiconductors
USE **MSM (semiconductors)**

metal–water reactions
GS chemical reactions
. **metal–water reactions**
RT corrosion
electrochemical corrosion
erosion
pitting
rusting
surface reactions

metallic glasses
DEF Amorphous alloys (glassy metals) produced by extremely rapid quenching of molten transition–metal alloys (e.g., iron, nickel, and/or cobalt). These metallic glasses exhibit unique mechanical, magnetic, and electrical properties, superconductive behavior, and anticorrosion resistance, depending on the alloys, their formation and quenching techniques.
GS glass
. **metallic glasses**
RT glass coatings
glass fibers
optical properties
silicon dioxide
spin glass
vitreous materials

metallic hydrogen
GS chemical elements
. hydrogen
. . hydrogen isotopes
. . . **metallic hydrogen**
. nuclides
. . isotopes
. . . hydrogen isotopes
. . . . **metallic hydrogen**
gases
. hydrogen
. . hydrogen isotopes
. . . **metallic hydrogen**
RT critical temperature
solid phases
solid state
solidified gases
solids

metallic plasmas
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **metallic plasmas**
. . . . . cesium plasma
. . . . . uranium plasmas
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **metallic plasmas**
. . . . . cesium plasma
. . . . . uranium plasmas
RT electron plasma
mercury arcs
plasma sheaths

metallic stars
GS celestial bodies
. stars
. . **metallic stars**
RT abundance
chemical composition
metallicity
stellar atmospheres
stellar structure

metallicity
DEF The abundance index of a metal or metals for a celestial body.
RT abundance
chemical analysis
chemical composition
galactic clusters
galaxies
globular clusters
hydrogen
interstellar matter
mass ratios
metallic stars
metals
spectroscopic analysis
star clusters
stars

metallizing
GS coating
. **metallizing**
coatings
. **metallizing**
RT cladding
electroplating
finishes
flame spraying
laminates
metal coatings
metal films
metal spraying
plating
spraying
substrates
vapor deposition

metallography
RT abrasion
alloys
anisotropy
crystal lattices
crystallography
electropolishing
etching
ferrography
inclusions
isotropy
∞ materials tests
metal crystals
∞ metallurgy
metals
microporosity
microscopes
microstructure
mushy zones
order–disorder transformations
photomicrography
polishing
radiography
replicas
solid suspensions
time temperature parameter
vibratory polishing
Widmanstatten structure
x ray diffraction

metalloids
UF *semimetals*
GS chemical elements
. **metalloids**
. . antimony
. . antimony isotopes
. . arsenic
. . . arsenic isotopes
. . boron
. . . boron isotopes
. . . . boron 10
. . germanium
. . . germanium isotopes
. . polonium
. . . polonium isotopes
. . . . polonium 208
. . . . polonium 209
. . . . polonium 210
. . silicon
. . . amorphous silicon
. . . porous silicon
. . . silicon isotopes
. . tellurium
. . . tellurium isotopes
RT alloys
arsenic alloys
boron alloys
intermetallics
metals
organometallic compounds
semiconductors (materials)

metalorganic compounds
USE **organometallic compounds**

metalosiloxane polymers
USE **organometallic polymers**

metalloxane polymers
USE **organometallic polymers**

∞ **metallurgy**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT alloying
alloys
beneficiation
casting
coating
coatings
corrosion
crystallography
dispersion strengthening
duplex operation
ferrous metals
foundries
fractography
furnaces
hardening (materials)
heat affected zone
heat treatment
hydrometallurgy
levitation melting
light alloys
mechanical properties
melt spinning
melting
metal coatings
metal foams
metal working
metallography
metals
nonferrous metals
∞ physical sciences
powder metallurgy
pyrometallurgy
rapid quenching (metallurgy)
recrystallization
∞ science
smelting
thermomechanical treatment

metalorganic chemical vapor deposition
(added May 1991)
UF *MOCVD (vapor deposition)*
OMCVD (vapor deposition)
organometallic vapor deposition
GS deposition
. vapor deposition
. . **metalorganic chemical vapor deposition**
RT coating
crystal growth
. organometallic compounds
space processing

metals
UF *magnetic metals*
GS **metals**
. actinide series
. . actinium

. . radium
. . . radium isotopes
. . . . radium 226
. . thorium
. . . thorium isotopes
. . transuranium elements
. . . americium
. . . . americium isotopes
. . . . . americium 241
. . . berkelium
. . . californium
. . . . californium isotopes
. . . curium
. . . . curium isotopes
. . . . . curium 242
. . . . . curium 244
. . . einsteinium
. . . fermium
. . . lawrencium
. . . mendelevium
. . . neptunium
. . . . neptunium isotopes
. . . nobelium
. . . plutonium
. . . . plutonium isotopes
. . . . . plutonium 238
. . . . . plutonium 239
. . . . . plutonium 240
. . . . . plutonium 241
. . . . . plutonium 244
. . . seaborgium
. . uranium
. . . uranium isotopes
. . . . uranium 232
. . . . uranium 233
. . . . uranium 234
. . . . uranium 235
. . . . uranium 238
. alkali metals
. . cesium
. . . cesium isotopes
. . . . cesium 133
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144
. . cesium vapor
. . francium
. . lithium
. . . liquid lithium
. . . lithium isotopes
. . potassium
. . . liquid potassium
. . . potassium isotopes
. . . . potassium 38
. . . . potassium 39
. . . . potassium 40
. . rubidium
. . . rubidium isotopes
. . . . rubidium 86
. . sodium
. . . liquid sodium
. . . sodium isotopes
. . . . sodium 22
. . . . sodium 24
. . . sodium vapor
. alkaline earth metals
. . barium isotopes
. aluminum
. . aluminum isotopes
. . . aluminum 26
. . . aluminum 27
. antimony isotopes
. astatine
. astatine isotopes
. barium
. . barium isotopes
. beryllium
. . beryllium isotopes
. . . beryllium 7
. . . beryllium 9
. . . beryllium 10
. bismuth
. . bismuth isotopes
. calcium
. . calcium isotopes
. ferrous metals
. gallium
. . gallium isotopes
. indium
. indium isotopes
. lead (metal)
. . lead isotopes
. liquid metals
. . liquid lithium
. . liquid potassium
. . liquid sodium
. . mercury (metal)
. . . mercury isotopes
. . . mercury vapor
. magnesium
. . magnesium isotopes
. metal vapors
. . mercury vapor
. . sodium vapor
. noble metals
. . gold
. . . gold isotopes
. . . . gold 198
. . ruthenium
. . . ruthenium isotopes
. . silver
. . . silver isotopes
. nonferrous metals
. protactinium
. . protactinium isotopes
. rare earth elements
. . cerium
. . . cerium isotopes
. . . . cerium 137
. . . . cerium 144
. . dysprosium
. . . dysprosium isotopes
. . erbium
. . . erbium isotopes
. . europium
. . . europium isotopes
. . gadolinium
. . . gadolinium isotopes
. . holmium
. . . holmium isotopes
. . lanthanum
. . . lanthanum isotopes
. . lutetium
. . . lutetium isotopes
. . neodymium
. . neodymium isotopes
. . praseodymium
. . . praseodymium isotopes
. . promethium
. . . promethium isotopes
. . samarium
. . . samarium isotopes
. . scandium
. . . scandium isotopes
. . terbium
. . . terbium isotopes
. . thulium
. . . thulium isotopes
. . ytterbium
. . . ytterbium isotopes
. . yttrium
. . . yttrium isotopes
. refractory metals
. . chromium
. . . chromium isotopes
. . iridium
. . . iridium isotopes
. . molybdenum
. . niobium
. . . niobium isotopes
. . . . niobium 95
. . osmium
. . . osmium isotopes
. . rhenium
. . . rhenium isotopes
. . tantalum
. . . tantalum isotopes
. . tungsten
. . tungsten isotopes
. strontium
. . strontium isotopes
. . . strontium 85
. . . strontium 87
. . . strontium 89
. . . strontium 90
. thallium
. . thallium isotopes
. tin
. . tin isotopes
. transition metals
. . cadmium
. . . cadmium isotopes
. . chromium
. . . chromium isotopes
. . cobalt
. . . cobalt isotopes
. . . . cobalt 58
. . . . cobalt 60
. . copper
. . . copper isotopes
. . gold
. . . gold isotopes
. . . . gold 198
. . hafnium
. . . hafnium isotopes
. . iridium
. . . iridium isotopes
. . iron
. . . iron isotopes
. . . . iron 57
. . . . iron 58
. . . . iron 59
. . manganese
. . . manganese isotopes
. . mercury (metal)
. . . mercury isotopes
. . . mercury vapor
. . molybdenum
. . nickel
. . . nickel isotopes
. . niobium
. . . niobium isotopes
. . . . niobium 95
. . osmium
. . . osmium isotopes
. . palladium
. . platinum
. . . platinum isotopes
. . rhenium
. . . rhenium isotopes
. . rhodium
. . . rhodium isotopes
. . ruthenium
. . . ruthenium isotopes
. . scandium
. . . scandium isotopes
. . silver
. . . silver isotopes

. . tantalum
. . . tantalum isotopes
. . technetium
. . technetium isotopes
. . titanium
. . . titanium isotopes
. . tungsten
. . tungsten isotopes
. . vanadium
. . . vanadium isotopes
. . yttrium
. . . yttrium isotopes
. . zinc
. . . zinc isotopes
. . zirconium
. . . zirconium isotopes
. . . . zirconium 95
. ultrapure metals
. uranium plasmas
RT alloys
antimony
arsenic
arsenic isotopes
bimetals
Borsic (tradename)
cermets
chemical elements
composite materials
conductors
eutectic composites
gadolinium alloys
intermetallics
isotopes
light alloys
liquid alloys
metal clusters
metal coatings
metal combustion
∞ metal compounds
metal crystals
metal films
metal foils
metal fuels
metal ions
metal powder
metal–gas systems
metallicity
metallography
metalloids
∞ metallurgy
monotectic alloys
palladium compounds
polonium
polonium 208
polonium 209
polonium 210
polonium isotopes
strategic materials
syntectic alloys

metamorphic rocks
DEF Rocks derived from pre-existing rocks by mineralogical, chemical and/or structural changes, essentially in the solid state. These changes are in response to marked changes in temperature, pressure, shearing stress, and chemical environment, generally at the depth of the Earth's crust. Metamorphic rocks constitute one of the three main classes into which rocks are divided, the others being igneous rocks and sedimentary rocks.
GS rocks
. **metamorphic rocks**
. . quartzite
RT metamorphism (geology)

metamorphism (geology)
DEF The mineralogical and structural adjustment of solid rocks to physical and chemical conditions which have been imposed at depth below the surface zones of weathering and cementation, which differ from the conditions under which the rocks in question originated.
RT contacts (geology)
metamorphic rocks
phase transformations
rocks

metastability
USE **metastable state**

metastable atoms
GS atoms
. **metastable atoms**
RT Penning effect

metastable state
UF *metastability*
RT excitation
radiation trapping
stability
steady state
unsteady state

metathesis
GS chemical reactions
. **metathesis**
RT electrolysis
ion exchanging

metazoa
USE **animals**

Meteor 1 rocket vehicle
GS rocket vehicles
. **Meteor 1 rocket vehicle**
RT liquid propellant rocket engines
ramjet engines
solid propellant rocket engines

meteor bursts
USE **meteoroid showers**

meteor craters
USE **craters**

meteor hazards
USE **meteoroid hazards**

meteor trails
DEF Anything, such as light or ionization, left along the trajectory of the meteor after the head of the meteor has passed. Used for meteoritic ionization.
UF *meteoritic ionization*
RT bolides
Earth atmosphere
meteoroid showers
meteoroids
micrometeoroids
∞ paths
Pribram meteorite
radio meteors
scatter propagation
sporadic meteoroids
∞ tracks
upper atmosphere

meteorite collisions
GS collisions
. **meteorite collisions**
RT asteroid collisions
cometary collisions
hypervelocity impact
meteoritic damage
meteoroid hazards
shatter cones
Tunguska meteorite

meteorite compression tests
USE **compression tests**
mechanical properties
meteorites

meteorite craters
UF *fossil meteorite craters*
meteoroid craters
GS craters
. **meteorite craters**
RT Canadian Shield
cratering
ejecta
lunar craters
lunar rays
maria
Mars craters
Mars surface
meteorites
meteoritic damage
planetary craters
projectile cratering
Ptolemaeus Crater
shatter cones
Tunguska meteorite
Tycho crater

meteorites
SN (LIMITED TO METEOROIDS WHICH HAVE REACHED THE SURFACE OF AN ASTEROID, NATURAL SATELLITE OR PLANET)
DEF Meteoroids which have reached the surface of the Earth without being completely vaporized. Used for meteorite compression tests.
UF *meteorite compression tests*
GS celestial bodies
. **meteorites**
. . iron meteorites
. . . Arcos meteorite
. . . Lazarev meteorite
. . . Odessa meteorite
. . . Sikhote-Alin meteorite
. . micrometeorites
. . stony meteorites
. . . achondrites
. . . . Bondoc meteorite
. . . . chassignites
. . . . Kapoeta achondrite
. . . . nakhlites
. . . . Norton County achondrite
. . . . shergottites
. . . . ureilites
. . . carbonaceous meteorites
. . . . carbonaceous chondrites
. . . . . Alais meteorite
. . . . . Allende meteorite
. . . . . Cold Bokkeveld meteorite
. . . . . Ivuna meteorite
. . . . . Murchison meteorite
. . . . . Murray meteorite
. . . . . Orgueil meteorite
. . . . . Tonk meteorite
. . . . ureilites
. . . chondrites
. . . . Bruderheim meteorite
. . . . carbonaceous chondrites
. . . . . Alais meteorite
. . . . . Allende meteorite
. . . . . Cold Bokkeveld meteorite
. . . . . Ivuna meteorite
. . . . . Murchison meteorite
. . . . . Murray meteorite
. . . . . Orgueil meteorite
. . . . . Tonk meteorite

. . . . Harleton meteorite
. . . . Hvittis chondrite
. . . . Okhansk meteorite
. . . . Pantar chondrites
. . . . Pribram meteorite
. . . tektites
. . . . australites
. . . . bediasites
. . . Tunguska meteorite
. . stony–iron meteorites
RT bolides
chondrule
coesite
foreign bodies
impact melts
meteorite craters
meteoritic composition
meteoritic microstructures
meteoroid showers
meteoroids
micrometeoroids
moldavite

meteoritic composition
GS composition (property)
. meteoritic composition
RT carbonaceous meteorites
cosmochemistry
iron meteorites
isotope ratios
kamacite
meteorites
schreibersite
stony meteorites
tektites
troilite

meteoritic damage
GS damage
. impact damage
. . meteoritic damage
RT ∞ bombardment
cratering
ejecta
hypervelocity impact
Mars craters
meteorite collisions
meteorite craters
meteoroid hazards
meteoroid protection
projectile cratering

meteoritic diamonds
GS diamonds
. meteoritic diamonds
RT ureilites

meteoritic dust
USE micrometeoroids

meteoritic ionization
USE atmospheric ionization
meteor trails

meteoritic microstructures
GS microstructure
. meteoritic microstructures
RT chondrule
iron meteorites
meteorites
stony meteorites
tektites
Widmanstatten structure

meteoroid concentration
GS composition (property)
. concentration (composition)
. . meteoroid concentration
density (number/volume)
. meteoroid concentration
RT flux density
mass distribution
spatial distribution
sporadic meteoroids

meteoroid craters
USE meteorite craters

meteoroid dust clouds
GS celestial bodies
. meteoroids
. . micrometeoroids
. . . meteoroid dust clouds
. . . . zodiacal dust
extraterrestrial matter
. interstellar matter
. . cosmic dust
. . . interplanetary dust
. . . . meteoroid dust clouds
. . . . . zodiacal dust
media
. interplanetary medium
. . interplanetary dust
. . . meteoroid dust clouds
. . . . zodiacal dust
particles
. dust
. . cosmic dust
. . . interplanetary dust
. . . . meteoroid dust clouds
. . . . . zodiacal dust
RT ∞ clouds
Explorer satellites
terrestrial dust belt

meteoroid hazards
UF *meteor hazards*
GS hazards
. flight hazards
. . meteoroid hazards
RT meteorite collisions
meteoritic damage
meteoroids
operational hazards
projectile cratering
spacecraft breakup

meteoroid protection
GS protection
. meteoroid protection
RT bumpers
impact damage
meteoritic damage
spacecraft shielding
spacecraft structures

meteoroid showers
DEF Groups of meteoroids with approximately parallel trajectories. Used for meteor bursts.
UF *meteor bursts*
GS celestial bodies
. meteoroid showers
. . Aquarid meteoroids
. . Arietid meteoroids
. . Cyrillid meteoroids
. . Draconid meteoroids
. . Geminid meteoroids
. . Leonid meteoroids
. . Orionid meteoroids
. . Perseid meteoroids
. . Quadrantid meteoroids
. . Taurid meteoroids
RT astronomy
bolides
comets
meteor trails
meteorites
meteoroids
∞ showers

Meteoroid Technology Satellite
USE Explorer 46 satellite

meteoroids
SN (LIMITED TO SOLID OBJECTS IN SPACE, MUCH SMALLER THAN AN ASTEROID AND MUCH LARGER THAN A MOLECULE)
DEF Solid objects moving in interplanetary space, of a size considerably smaller than asteroids and considerably larger than atoms or molecules. Used for meteors.
UF *meteors*
GS celestial bodies
. meteoroids
. . Aquarid meteoroids
. . Arietid meteoroids
. . bolides
. . . Cyrillid meteoroids
. . Draconid meteoroids
. . Geminid meteoroids
. . Leonid meteoroids
. . micrometeoroids
. . . meteoroid dust clouds
. . . . zodiacal dust
. . Orionid meteoroids
. . Perseid meteoroids
. . Quadrantid meteoroids
. . radio meteors
. . sporadic meteoroids
. . Taurid meteoroids
RT asteroid belts
asteroids
bumpers
Chiron
comets
cosmic dust
Gaspra asteroid
hypervelocity projectiles
Ida asteroid
interplanetary dust
interplanetary medium
meteor trails
meteorites
meteoroid hazards
meteoroid showers
micrometeorites
natural satellites
particle tracks
Radiation Meteoroid spacecraft
solar system
space debris
Tempel 2 comet
Toro asteroid
Toutatis asteroid
Vesta asteroid

meteorological balloons
GS expandable structures
. inflatable structures
. . balloons
. . . meteorological balloons
. . . . jimsphere balloons
. . . . ROBIN balloons
RT dropsondes
high altitude balloons
radiosondes
rawinsondes
rockoons
skyhook balloons
sounding
superpressure balloons
tethered balloons
upper atmosphere

weather forecasting

meteorological charts
UF *weather charts*
weather maps
GS charts
. meteorological charts
maps
. meteorological charts
RT isobars (pressure)
radar maps
synoptic meteorology

meteorological flight
RT aerial reconnaissance
balloon flight
∞ flight
ice reporting
rocket flight
SIRS B satellite
sounding
space flight
weather forecasting

meteorological instruments
GS measuring instruments
. meteorological instruments
. . barometers
. . cloud height indicators
. . dropsondes
. . radiometeorographs
. . radiosondes
. . . ionosondes
. . . rawinsondes
. . rain gages
. . weather data recorders
. . wind vanes
RT anemometers
balloon-borne instruments
hot-film anemometers
hot-wire anemometers
humidity measurement
hygrometers
hypsometers
∞ instruments
light scattering meters
meteorology
nephanalysis
psychrometers
recording instruments
rocket-borne instruments
SIRS B satellite
sodar
sound detecting and ranging
sounding rockets
transducers
weather reconnaissance aircraft
weather stations

meteorological parameters
GS constraints
. meteorological parameters
. . Brunt-Vaisala frequency
RT aerology
agroclimatology
annual variations
Atmospheric & Oceanographic Inform Sys
Atmospheric Cloud Physics Lab (Spacelab)
atmospheric pressure
atmospheric temperature
atmospheric turbulence
aviation meteorology
ceilings (meteorology)
cloud cover
cockpit weather information systems
cold fronts
equatorial atmosphere
fronts (meteorology)
humidity
isotherms
moisture
ocean data acquisitions systems
oceanographic parameters
precipitation (meteorology)
storms (meteorology)
teleconnections (meteorology)
temperature inversions
tropical meteorology
warm fronts
weather
wind direction
wind measurement
wind velocity

meteorological probes
USE sondes

meteorological radar
UF *weather radar*
GS radar
. meteorological radar
RT precipitation particle measurement
pulse radar
radar scanning
radar tracking
radio meteorology
surveillance radar
weather forecasting

meteorological research aircraft
GS research vehicles
. research aircraft
. . meteorological research aircraft
RT ∞ aircraft
data acquisition

meteorological rockets
USE sounding rockets

meteorological satellites
GS artificial satellites
. meteorological satellites
. . AEROS satellite
. . Cosmos 144 satellite
. . D-2 satellites
. . DMSP satellites
. . Elektron satellites
. . . Elektron 1 satellite
. . . Elektron 2 satellite
. . . Elektron 4 satellite
. . EOLE satellites
. . ESSA satellites
. . . ESSA 1 satellite
. . . ESSA 2 satellite
. . . ESSA 3 satellite
. . . ESSA 4 satellite
. . . ESSA 5 satellite
. . . ESSA 6 satellite
. . . ESSA 7 satellite
. . . ESSA 8 satellite
. . . ESSA 9 satellite
. . Explorer 9 satellite
. . Explorer 17 satellite
. . Explorer 19 satellite
. . GEOLE satellites
. . GOES satellites
. . . GOES 1
. . . GOES 2
. . . GOES 3
. . . GOES 4
. . . GOES 5
. . . GOES 6
. . . GOES 7
. . . GOES 8
. . . GOES 9
. . METEOSAT satellite
. . Nimbus satellites
. . . Nimbus 1 satellite
. . . Nimbus 2 satellite
. . . Nimbus 3 satellite
. . . Nimbus 4 satellite
. . . Nimbus 5 satellite
. . . Nimbus 6 satellite
. . . Nimbus 7 satellite
. . NOAA satellites
. . . NOAA 2 satellite
. . . NOAA 3 satellite
. . . NOAA 4 satellite
. . . NOAA 5 satellite
. . . NOAA 6 satellite
. . . NOAA 7 satellite
. . . NOAA 8 satellite
. . . NOAA 9 satellite
. . . NOAA 10 satellite
. . . NOAA 11 satellite
. . . NOAA 12 satellite
. . . NOAA 14 satellite
. . San Marco satellites
. . . San Marco 1 satellite
. . . San Marco 2 satellite
. . . San Marco 3 satellite
. . SEOCS (satellite)
. . SIRS B satellite
. . Sputnik 1 satellite
. . Sputnik 2 satellite
. . Sputnik 3 satellite
. . SRET satellites
. . . SRET 1 satellite
. . . SRET 2 satellite
. . Synchronous Earth Observatory satellite
. . . SMS 1
. . . SMS 2
. . Synchronous Meteorological Satellite
. . . SMS 1
. . . SMS 2
. . TIROS satellites
. . . ITOS satellites
. . . . ITOS 1
. . . . ITOS 2
. . . . ITOS 3
. . . . ITOS 4
. . . TIROS 1 satellite
. . . TIROS 2 satellite
. . . TIROS 3 satellite
. . . TIROS 4 satellite
. . . TIROS 5 satellite
. . . TIROS 6 satellite
. . . TIROS 7 satellite
. . . TIROS 8 satellite
. . . TIROS 9 satellite
. . . TIROS 10 satellite
. . . TIROS M
. . . TIROS N series satellites
. . . . NOAA 6 satellite
. . Vanguard 2 satellite
RT AgRISTARS project
ATS
cloud photography
geophysical satellites
GOES 1
GOES 2
GOES 3
GOES 4
GOES 5
infrared photography
Japanese space program
meteorology
military spacecraft

navigation satellites
Nimbus project
NOESS
satellite observation
satellite sounding
satellite television
sounding rockets
space probes
TIROS project
unmanned spacecraft
Vanguard satellites
weather forecasting
weather stations

meteorological services
UF *World Weather Watch*
WWW (meteorology)
GS services
. meteorological services
RT automatic weather stations
aviation meteorology
flight conditions
weather forecasting
weather stations

meteorological solenoids
RT baroclinity
vortices

meteorological stations
USE **weather stations**

meteorology
DEF The study dealing with the phenomena of the atmosphere. This includes not only the physics, chemistry, and dynamics of the atmosphere, but is extended to include many of the direct effects of the atmosphere upon the Earth's surface, the oceans, and life in general. A distinction can be drawn between meteorology and climatology, the latter being primarily concerned with average not actual weather conditions. Used for atmospheric conditions.
UF *atmospheric conditions*
GS **meteorology**
. aerology
. agrometeorology
. Alpine meteorology
. aviation meteorology
. biometeorology
. hydrometeorology
. . marine meteorology
. mesometeorology
. micrometeorology
. . microbursts (meteorology)
. nuclear meteorology
. planetary meteorology
. polar meteorology
. radio meteorology
. synoptic meteorology
. tropical meteorology
. weather forecasting
. . long range weather forecasting
. . nowcasting
. . numerical weather forecasting
. . statistical weather forecasting
RT acid rain
acoustic sounding
aeronomy
agroclimatology
air land interactions
air masses
annual variations
anticyclones
anvil clouds
arc clouds
∞ atmosphere
Atmospheric & Oceanographic Inform Sys
atmospheric density
atmospheric physics
atmospheric turbulence
baroclinic instability
brightness temperature
cap clouds
ceilings (meteorology)
cirrocumulus clouds
cirrostratus clouds
cirrus shields
climate
climatology
cloud cover
clouds (meteorology)
cold fronts
condensation nuclei
convection
convection clouds
Coriolis effect
cyclones
DMSP satellites
Earth cryosphere
Earth sciences
environmental engineering
environmental monitoring
fronts (meteorology)
GARP Atlantic Tropical Experiment
geology
geophysics
Global Atmospheric Research Program
hailstorms
humidity
hurricanes
hydroclimatology
hydrodynamic equations
hydrography
hydrology
insolation
isotherms
mesoscale phenomena
meteorological instruments
meteorological satellites
METEOSAT satellite
method of characteristics
moisture
National Severe Storms Project
nephanalysis
NOESS
oceanography
∞ physical sciences
precipitation (meteorology)
∞ science
sea breeze
seasons
sodar
sound detecting and ranging
storms (meteorology)
teleconnections (meteorology)
temperature
temperature inversions
tropical regions
tropical storms
typhoons
warm fronts
weather
wind (meteorology)
wind measurement
World Meteorological Organization
zonal flow (meteorology)

meteors
USE **meteoroids**

METEOSAT satellite
GS artificial satellites
. ESA satellites
. . METEOSAT satellite
. meteorological satellites
. . METEOSAT satellite
ESA spacecraft
. ESA satellites
. . METEOSAT satellite
RT cloud cover
cloud photography
European Space Agency
European space programs
French satellites
French space program
infrared photography
ISCCP Project
meteorology
satellite observation
weather

meters
USE **measuring instruments**

methacrylate resins
USE **acrylic resins**

methamphetamine
GS amines
. amphetamines
. . methamphetamine
drugs
. methamphetamine

methanation
DEF The conversion of various organic compounds to produce methane.
GS chemical reactions
. methanation
RT biomass energy production
coal gasification
hydrocarbon fuels
hydropyrolysis

methane
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . methane
RT bioconversion
chlorofluoromethane
coal derived gases
hydrocarbon fuels
hydropyrolysis
landfills
liquefied natural gas
natural gas
natural gas exploration
Neptune atmosphere
oil fields
petroleum products
solvent refined coal
synthane
Uranus atmosphere

methanol
USE **methyl alcohol**

methanyl
USE **methylidyne**

methionine
GS acids
. amino acids
. . methionine
organic compounds
. amino acids

. . methionine

method of characteristics
UF *characteristic method*
RT ∞ characteristics
compressible fluids
flow distribution
hyperbolic functions
meteorology
∞ methodology
partial differential equations
plastic properties
Prandtl–Meyer expansion
steady flow
unsteady flow

method of moments
DEF A method of estimating the parameters of a distribution by relating the parameters to moments.
RT distribution moments
integral equations
mathematical models
matrices (mathematics)
∞ methodology
moment distribution
moments
numerical analysis

∞ methodology
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *methods*
techniques
RT approximation
asymptotic methods
Biot method
boundary integral method
Bridgman method
cluster variation method
critical path method
Crocco method
Czochralski method
Debye–Scherrer method
Delphi method (forecasting)
digital techniques
emergency breathing techniques
Enskog method
energy methods
equilibrium methods
ethics
finite element method
finite volume method
Fujita method
Galerkin method
GERT
Glimm method
Halphen method
Hartree–Fock–Slater method
heuristic methods
Hill method
imaging techniques
Jacobi matrix method
Kaldshi method
Latin square method
Laue method
least squares method
Lighthill method
management methods
matrix management
matrix methods
maximum entropy method
Maxwell–Mohr method
∞ mechanism
method of characteristics
method of moments
Milne method
Milne–Thomson method
minimum entropy method
Moire effects
Monte Carlo method
multigrid methods
Newton–Raphson method
panel method (fluid dynamics)
particle in cell technique
pattern method (forecasting)
Percus method
Pohlhausen method
probe method (forecasting)
problem solving
profile method (forecasting)
Rayleigh–Ritz method
relaxation method (mathematics)
Ritz averaging method
ruler method
Runge–Kutta method
Schmidt method
Schwartz method
simplex method
spectral methods
steepest descent method
strain energy methods
traveling solvent method
Van Slyke method
von Zelpel method
vortex in cell technique
Wentzel–Kramer–Brillouin method
wing flow method tests

methods
USE **methodology**
procedures

methoxy systems
RT alcohols
∞ chemical compounds
indoles
organic chemistry
organic compounds
pyrroles
∞ systems

methyl alcohol
UF *methanol*
GS hydroxyl compounds
. alcohols
. . methyl alcohol
RT Karl Fischer reagent

methyl chloride
GS drugs
. anesthetics
. . methyl chloride
RT chlorides

methyl chlorosilanes
GS hydrogen compounds
. hydrides
. . silanes
. . . methyl chlorosilanes
methyl compounds
. methyl chlorosilanes
silicon compounds
. silanes
. . methyl chlorosilanes

methyl compounds
GS methyl compounds
. acetonitrile
. methyl chlorosilanes
. methyl nitrate
. methyl polysiloxanes
RT ∞ chemical compounds
dimethyl compounds
organic compounds
trimethyl compounds

methyl cyanide
USE **acetonitrile**

methyl nitrate
GS alkyl compounds
. methyl nitrate
methyl compounds
. methyl nitrate
nitrogen compounds
. nitrates
. . methyl nitrate

methyl polysiloxanes
GS methyl compounds
. methyl polysiloxanes
polysiloxanes
. methyl polysiloxanes
silicon polymers
. silicones
. . methyl polysiloxanes
RT ∞ polymers
silicon compounds

methylation
GS chemical reactions
. methylation
RT alkylation

methylene
GS organic compounds
. hydrocarbons
. . methylene
RT dyes
staining

methylene blue
GS dyes
. methylene blue
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azines
. . . . methylene blue
pyrazines
. azines
. . methylene blue
RT chemical analysis
chemical indicators
∞ indicators
staining

methylene diamine
GS amines
. methylene diamine

methylhydrazine
GS hydrazines
. methylhydrazine
RT dimethylhydrazines

methylidyne
(added June 1983)
UF *CH (methylidyne)*
methenyl
GS organic compounds
. hydrocarbons
. . methylidyne
radicals
. methylidyne
RT ∞ aromatic compounds
carbon compounds
diatomic molecules
interstellar gas
interstellar matter

molecular clouds

Metis
(added January 1986)
DEF A natural satellite of Jupiter orbiting at a mean distance of 127,980 kilometers.
GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . Metis
RT Jupiter (planet)

metric conversion
USE metrication

metric photography
DEF The recording of events by means of photography (either singly or sequentially), together with appropriate metric coordinates to form the basis for accurate measurements.
GS imagery
. photography
. . metric photography

metric space
GS geometry
. topology
. . metric space
. . . Hilbert space
. . . . Sobolev space
RT Banach space
bimetric theories

metric system
USE International System of Units

metrication
DEF The conversion on an industry and/or nationwide basis of English units of measurement into the International System of Units, including engineering and manufacturing standards, tools and instruments, and all affected areas in the government and private sectors. Used for metric conversion.
UF *metric conversion*
RT ∞ conversion
International System of Units
metrology
standardization
units of measurement

metrology
DEF The science of dimensional measurement; sometimes includes the science of weighing.
RT International System of Units
∞ measurement
measuring instruments
metrication
standards
units of measurement

Metropolitan aircraft
USE CV-440 aircraft

metropolitan areas
USE cities

Mexican space program
(added March 1988)
GS programs
. space programs
. . Mexican space program
RT Mexico

Mexico
GS nations
. Mexico
RT Colorado River (North America)
Gulf of California (Mexico)
Gulf of Mexico
Imperial Valley (CA)
Lower California (Mexico)
Mexican space program
North America
Rio Grande (North America)
San Andreas Fault
Southern California

MGCO
USE Mars Observer

MH-262 aircraft
UF *Max Holste MH-262 aircraft*
Nord 262 aircraft
GS jet aircraft
. turboprop aircraft
. . MH-262 aircraft
light aircraft
. MH-262 aircraft
monoplanes
. MH-262 aircraft
Nord aircraft
. MH-262 aircraft
transport aircraft
. MH-262 aircraft
RT ∞ aircraft
cargo aircraft
passenger aircraft

mica
UF fluoromica
GS minerals
. mica
. . biotite
. . fluorophlogopite
. . muscovite
RT Ignacus rocks
vermiculite

micarta
GS composite materials
. polymer matrix composites
. . reinforced plastics
. . . micarta
plastics
. reinforced plastics
. . micarta
. synthetic resins
. . thermosetting resins
. . . phenolic resins
. . . . micarta
resins
. synthetic resins
. . thermosetting resins
. . . phenolic resins
. . . . micarta
RT fabrics
fiber composites
insulation
∞ polymers

mice
GS animals
. vertebrates
. . mammals
. . . rodents
. . . . mice
. . . . . jerboas
. . . . . pocket mice
RT rats

Michael reaction
GS chemical reactions
. Michael reaction

Michaelis theory
RT ∞ theories

Michell theorem
GS theorems
. Michell theorem
RT stress analysis
structural analysis

Michelson interferometers
GS measuring instruments
. interferometers
. . Michelson interferometers
RT astrophysics
radio astronomy
spectrometers

Michigan
GS nations
. United States
. . Michigan
RT Pontiac (MI)
Saginaw Bay (MI)

microanalysis
GS chemical tests
. chemical analysis
. . microanalysis
RT electron microscopes
electron microscopy
electrophotometry
mass spectrometers
∞ materials tests
neutron activation analysis
qualitative analysis
quantitative analysis
scanning electron microscopy
spectroscopic analysis
transmission electron microscopy
x ray analysis

microbalances
UF *microscales*
GS measuring instruments
. indicating instruments
. . weight indicators
. . . microbalances

microballoons
DEF Very small glass spheres (50 to 100 micrometers in diameter) used as targets in the laser fusion programs.
GS expandable structures
. inflatable structures
. . balloons
. . . microballoons
RT globules
lasers
spheres
targets

microbe
USE microorganisms

microbeams
GS beams (radiation)
. microbeams
RT collimation
crystallography
x ray analysis

microbiology
GS microbiology
. bacteriology
RT ∞ biology
culture techniques
gnotobiotics

microbursts (meteorology)
SN (EXCLUDES IONOSPHERIC RADIATION MICROBURSTS)
DEF A strong, localized downdraft that strikes the ground creating an outflow of severe winds near the ground that diverge radially from the impact point.
GS meteorology
. micrometeorology
. . microbursts (meteorology)
storms
. storms (meteorology)
. . downbursts
. . . microbursts (meteorology)
RT aviation meteorology
flight hazards
thunderstorms
vertical air currents
wind shear

microcalorimeters
USE calorimeters

microchannel plates
DEF An array of microchannels formed into plates and contained in a photomultiplier tube. Used for multichannel plates.
UF *multichannel plates*
RT channel multipliers
dynamic range
integrated circuits
microchannels
microwave equipment
photomultiplier tubes
∞ plates
thin films

microchannels
RT frequencies
image converters
light amplifiers
microchannel plates
multi-anode microchannel arrays
night vision
optical equipment
photocathodes
ultraviolet radiation

microcircuits
USE microelectronics

microclimatology
GS climatology
. microclimatology
RT agroclimatology
biometeorology
micrometeorology

microcomputers
DEF Complete digital computers utilizing a microprocessor consisting of one or more integrated circuit chips as the central arithmetic and logic unit, and added chips to provide timing, program memory, random access memory interfaces for input and output signals and other functions. Some microcomputers consist of a single integrated-circuit chip.
GS data processing equipment
. computers
. . digital computers
. . . microcomputers
. . . . personal computers
. . . . . IBM personal computers
. . . . . Macintosh personal computers
RT microprocessors
minicomputers

microcracks
GS fractures (materials)
. cracks
. . microcracks
RT crack closure
crack geometry
crack initiation
Eiber equation
surface cracks

microcrystals
GS crystals
. microcrystals
RT crystallites
nanocrystals
spherulites

Microcystis
GS plants (botany)
. algae
. . blue green algae
. . . Microcystis
. thermophilic plants
. . blue green algae
. . . Microcystis
RT pollution

microdensitometers
DEF Image analysis devices for resolving gray-level differences within or between features and for integrating the optical density across scanned images of irregularly shaped objects.
GS measuring instruments
. densitometers
. . microdensitometers
. optical measuring instruments
. . microdensitometers
optical equipment
. optical measuring instruments
. . microdensitometers
RT gravimeters
optical density
optical measurement
photometers

microelectronics
UF *microcircuits*
GS microelectronics
. large scale integration
. medium scale integration
. very large scale integration
RT beam leads
chips (electronics)
circuits
∞ electronics
encapsulated microcircuits
ion implantation
laser microscopy
microinstrumentation
microminiaturization
microminiaturized electronic devices
micromodules
molecular electronics
photolithography
photomasks
single event upsets
transistor circuits
wafers

microfibers
GS fibers
. microfibers

microfilms
GS photographic film
. microfilms
RT data retrieval
data storage
microphotographs
readers
reproduction (copying)

micrography
USE photomicrography

microgravity
DEF A condition in which the acceleration acting on a body is less than normal gravity, between 0 and 1 g. Used for low gravity, reduced gravity, and subgravity.
UF *low gravity*
reduced gravity
subgravity
GS gravitation
. microgravity
RT antigravity
bioprocessing
drop towers
Earth orbital environments
fluid management
high gravity environments
low gravity manufacturing
low weight
Marangoni convection
∞ microgravity applications
space processing
weightlessness

∞ **microgravity applications**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bioprocessing
commerce lab
crystal growth
electrophoresis
low gravity manufacturing
microgravity
space commercialization
space manufacturing
space processing
surface tension driven convection

microhardness
UF *microindentation*
GS mechanical properties
. hardness
. . microhardness
RT Knoop hardness
Rockwell hardness

microindentation
USE microhardness

microinstrumentation
RT measuring instruments
microelectronics
microminiaturization

micromachining
(added September 1993)
DEF Performing various microscopic scale cutting or grinding operations on a piece of work.
GS machining
. micromachining
RT cutting
drilling
grinding (material removal)
grooving
laser cutting
laser drilling
metal cutting
metal working
micromechanics
microstructure
photoengraving
photomasks
photomechanical effect
surface finishing

V grooves

micromanometers
USE manometers

micromechanics
DEF The study of the constraints, the grain size, and their interrelationship in materials.
RT composite materials
crack propagation
fracture mechanics
mechanical properties
∞ mechanics (physics)
micromachining
microstructure
reinforcing fibers
stress concentration

micrometeorites
DEF Very small meteorites or meteoritic particles with a diameter in general less than a millimeter.
GS celestial bodies
. meteorites
. . micrometeorites
RT cosmic dust
hypervelocity projectiles
meteoroids
micrometeoroids
tektites
zodiacal dust

Micrometeoroid Explorer satellites
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Micrometeoroid Explorer satellites

micrometeoroids
UF *meteoritic dust*
micrometeors
GS celestial bodies
. meteoroids
. . micrometeoroids
. . . meteoroid dust clouds
. . . . zodiacal dust
RT cosmic dust
Explorer satellites
interplanetary dust
meteor trails
meteorites
micrometeorites
Poynting–Robertson effect
space debris
terrestrial dust belt
zodiacal light

micrometeorology
GS meteorology
. micrometeorology
. . microbursts (meteorology)
RT agrometeorology
mesometeorology
microclimatology
turbulence

micrometeors
USE micrometeoroids

micrometers
DEF Instruments for making precise linear measurements in which the displacements measured correspond to the travel of a screw of accurately known pitch.
GS measuring instruments
. micrometers
RT dimensional measurement
distance measuring equipment

micromillimmeters
GS measuring instruments
. ammeters
. . micromillimmeters
RT electric current
electrical measurement
galvanometers

microminiaturization
GS miniaturization
. microminiaturization
RT circuits
DTL integrated circuits
integrated circuits
large scale integration
linear integrated circuits
microelectronics
microinstrumentation
microminiaturized electronic devices
miniature electronic equipment
molecular electronics
semiconductor devices
subminiaturization
thick films
thin films
TTL integrated circuits
wafers

microminiaturized electronic devices
GS microminiaturized electronic devices
. micromodules
RT microelectronics
microminiaturization
miniature electronic equipment

micromodules
GS electronic equipment
. electronic modules
. . micromodules
microminiaturized electronic devices
. micromodules
modules
. electronic modules
. . micromodules
RT beam leads
∞ containers
electronic packaging
microelectronics
microprocessors
miniature electronic equipment
photolithography

micrometers
SN (EXCLUDES ROCKET ENGINES)
GS motors
. electric motors
. . micrometers

microorganisms
UF *microbe*
GS microorganisms
. bacteria
. . actinomycetes
. . archaebacteria
. . Azotobacter
. . Bacillus
. . . stearothermophilus
. . Clostridium
. . . Clostridium botulinum
. . Escherichia
. . hydrogenomonas
. . Klebsiella
. . nitrobacter
. . pseudomonas
. . salmonella
. . sarcina
. . serratia
. . staphylococcus
. . streptococcus
. . streptomycetes
. protozoa
. . amoeba
. . . palomyxa
. . Flagellata
. . . Euglena
. . . trypanosome
. . paramecia
. Rotifera
. viruses
. . adenoviruses
. . bacteriophages
. . human immunodeficiency virus
RT aerobes
algae
anaerobes
animals
antibiotics
gnotobiotics
invertebrates
mesophiles
microparticles
microspores
plants (botany)
pollution
psychrophiles
red tide
saprophytes
spores
virulence

microparticles
GS particles
. microparticles
RT condensation nuclei
ferrofluids
microorganisms
particulate reinforced composites

microphones
DEF Electroacoustic transducers which receive acoustic signals and deliver corresponding electric signals.
GS audio equipment
. microphones
transducers
. sound transducers
. . electroacoustic transducers
. . . microphones
RT hydrophones
interphones
magnetic transducers
monaural signals
transmitters
ultrasonic wave transducers

microphotographs
GS photographs
. microphotographs
RT data storage
microfilms
photography
photomasks

microphotometers
USE photometers

microplasmas
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . microplasmas
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . microplasmas

micropolar fluids
GS incompressible fluids
. micropolar fluids
RT fluid mechanics
∞ fluids
microstructure

microporosity
GS porosity
. microporosity
RT mechanical properties
metallography
microstructure

microprocessors
GS computer components
. microprocessors
. . Intel 8080 microprocessor
data processing equipment
. microprocessors
. . Intel 8080 microprocessor
RT central processing units
chips (electronics)
computer design
computer storage devices
computer techniques
data processing
distributed processing
firmware
integrated circuits
large scale integration
microcomputers
micromodules
onboard data processing
transputers

microprogramming
GS computer programming
. microprogramming
RT firmware
∞ programming

micropulsations
GS pulses
. micropulsations
. . geomagnetic micropulsations
RT variations

microrocket engines
GS engines
. rocket engines
. . microrocket engines
. . . Orbit Maneuvering Engine (Space Shuttle)
RT electric rocket engines
electrostatic engines
microthrust
Vernier engines

microscales
USE microbalances

microscopes
DEF Optical instruments capable of producing a magnified image of a small object.
GS microscopes
. acoustic microscopes
. electron microscopes
. ion microscopes
. optical microscopes
RT binoculars
eyepieces
metallography
microscopy
optical equipment
optical measuring instruments
photomicrography
ultraviolet microscopy

microscopy
DEF The science of the interpretive use and applications of microscopes.
GS microscopy
. atomic force microscopy
. electron microscopy
. . scanning electron microscopy
. . scanning tunneling microscopy
. . transmission electron microscopy
laser microscopy
. photoacoustic microscopy
. ultraviolet microscopy
RT cytometry
microscopes
microtomy
phase contrast
photomicrography
slides (microscopy)

microseisms
DEF Seismic pulses of short duration and low amplitude, often occurring previous to failure of a material or structures.
GS elastic waves
. seismic waves
. . microseisms
RT crustal fractures
earthquake damage
earthquakes

microsonics
GS acoustics
. microsonics
RT elastic properties
piezoelectric crystals
sound fields
sound waves
surface acoustic wave devices
surface waves

microspores
GS spores
. microspores
RT fungi
microorganisms
plants (botany)
protozoa

microstrip antennas
DEF Antennas which consist of thin metallic conductors bonded to thin grounded dielectric substrates. The metallic conductors generally have some regular shape, for example, rectangular, circular, or elliptical. Feeding is often by means of a coaxial probe or a microstrip transmission line.
GS antennas
. microstrip antennas
microstrip devices
. microstrip antennas
RT antenna design
microstrip transmission lines
microwave antennas
patch antennas
waveguide antennas

microstrip devices
GS microstrip devices
. microstrip antennas
. microstrip transmission lines
RT circuits
integrated circuits
microwave circuits
microwave equipment

microstrip transmission lines
UF *flat coaxial transmission lines*
parallel strip lines
GS microstrip devices
. microstrip transmission lines
transmission lines
. strip transmission lines
. . microstrip transmission lines
RT directional couplers
microstrip antennas
microwave transmission

microstructure
GS microstructure
. meteoritic microstructures
. nanostructure (characteristics)
. Widmanstatten structure
RT aging (materials)
aging (metallurgy)
atomic force microscopy
austenite
bainite
Bauschinger effect
cast alloys
casting
castings
cementite
crystal structure
crystallography
ferrites
grain size
hardening (materials)
heat treatment
lamella (metallurgy)
martensite
metallography
micromachining
micromechanics
micropolar fluids
microporosity
molecular dynamics
order–disorder transformations
Ostwald ripening
pearlite
photomicrography
precipitates
quenching (cooling)
shape memory alloys
silicon alloys
spherulites
∞ structures
thermomechanical treatment
vanadium alloys
work softening

microthrust
SN (NOT USED FOR GEOLOGICAL FAULTS, SEISMOLOGY, OR TECTONICS)
GS thrust
. low thrust
. . microthrust
RT jet thrust
low thrust propulsion
microrocket engines
rocket thrust
variable thrust

microtomy
RT medical equipment
microscopy

microtrons
GS particle accelerators
. cyclotrons
. . microtrons
RT betatrons
synchrotrons

microvision landing aid
GS display devices

. microwave landing aid
landing aids
. microwave landing aid

microwave absorption
(added August 1991)
DEF The absorption of electromagnetic radiation in the microwave frequency range.
GS energy absorption
. radiation absorption
. . electromagnetic absorption
. . . microwave absorption
RT absorptance
∞ absorption
absorption spectra
absorptivity
activation
atmospheric attenuation
microwave attenuation
microwave frequencies
microwave scattering
microwave transmission
microwaves
radar
radar absorbers

microwave amplifiers
GS amplifiers
. microwave amplifiers
. . crossed field amplifiers
. . cyclotron resonance devices
. . planotrons
microwave equipment
. microwave amplifiers
. . crossed field amplifiers
. . cyclotron resonance devices
. . planotrons
RT interstellar masers
masers
parametric amplifiers
transferred electron devices

microwave antennas
GS antennas
. radio antennas
. . microwave antennas
. . . horn antennas
. . . lens antennas
. . . rectennas
. . . spacetennas
microwave equipment
. microwave antennas
. . horn antennas
. . lens antennas
. . rectennas
. . spacetennas
radio equipment
. radio antennas
. . microwave antennas
. . . horn antennas
. . . lens antennas
. . . rectennas
. . . spacetennas
RT aircraft antennas
antenna arrays
backfire antennas
directional antennas
Gregorian antennas
helical antennas
microstrip antennas
missile antennas
multibeam antennas
omnidirectional antennas
parabolic antennas
parabolic reflectors
patch antennas
radar antennas
reflector antennas
slot antennas
waveguide antennas

microwave attenuation
GS attenuation
. microwave attenuation
transmission
. electromagnetic wave transmission
. . microwave attenuation
. signal transmission
. . microwave attenuation
RT microwave absorption
wave propagation

microwave circuits
GS circuits
. microwave circuits
RT microstrip devices

microwave coupling
GS coupling
. electromagnetic coupling
. . microwave coupling
RT antenna couplers
coupling circuits
cross coupling
directional antennas
directional couplers
optical coupling

microwave emission
GS electromagnetic radiation
. radio waves
. . short wave radiation
. . . microwaves
. . . . microwave emission
emission
. microwave emission
RT cosmic noise
diffraction radiation
extraterrestrial radiation
extraterrestrial radio waves
linear polarization
microwave signatures
stellar radiation

microwave equipment
GS microwave equipment
. gyrators
. . microwave filters
. microwave amplifiers
. . crossed field amplifiers
. . cyclotron resonance devices
. . planotrons
. microwave antennas
. . horn antennas
. . lens antennas
. . rectennas
. . spacetennas
. microwave interferometers
. microwave oscillators
. . magnetrons
. . . nigotrons
. microwave probes
. . microwave plasma probes
. microwave radiometers
. . Advanced Microwave Sounding Unit
. microwave scanning beam landing system
. microwave tubes
. . celescopes
. . cyclotron resonance devices
. . klystrons
. . magnetrons
. . . nigotrons
. . planotrons
. . traveling wave tubes
. . . backward wave tubes
. . . . hellitrons
. . . carcinotrons
. thyratrons
RT gas discharge tubes
microchannel plates
microstrip devices

microwave filters
GS electromagnetic wave filters
. electric filters
. . microwave filters
microwave equipment
. gyrators
. . microwave filters
RT bandpass filters
bandstop filters
digital filters
FIR filters
high pass filters
low pass filters
radar filters
radio filters
rectangular waveguides
tunable filters
waveguide filters

microwave frequencies
SN (1 TO 100 GHZ)
GS frequencies
. radio frequencies
. . microwave frequencies
. . . C band
. . . extremely high frequencies
. . . P band
. . . superhigh frequencies
RT acoustic microscopes
centimeter waves
microwave absorption
microwaves
passive L-band radiometers
praetersonic devices

microwave holography
GS imagery
. photography
. . holography
. . . microwave holography
RT imaging techniques
microwaves
wave front reconstruction

microwave imagery
GS imagery
. microwave imagery
RT radarscopes
synthetic aperture radar
x ray imagery

microwave interferometers
GS measuring instruments
. interferometers
. . microwave interferometers
microwave equipment
. microwave interferometers
RT Fabry-Perot interferometers
plasma diagnostics

microwave landing systems
DEF A precision instrument approach landing system operating in the microwave spectrum which provides lateral and vertical guidance to aircraft having compatible avionics equipment.
GS landing aids
. microwave landing systems
. . microwave scanning beam landing system
RT air traffic control

aircraft landing
aircraft safety
approach control
automated en route ATC
automatic landing control
∞ systems

microwave oscillators
GS microwave equipment
. **microwave oscillators**
. . magnetrons
. . . nigotrons
oscillators
. **microwave oscillators**
. . magnetrons
. . . nigotrons
RT backward wave tubes
Barritt diodes
diffraction radiation
gas discharge tubes
klystrons
microwave tubes
superconducting cavity resonators
transferred electron devices
traveling wave tubes
vacuum tube oscillators
voltage controlled oscillators

microwave photography
GS imagery
. photography
. . **microwave photography**
RT radar data
radar photography
radarscopes

microwave plasma probes
GS measuring instruments
. microwave probes
. . **microwave plasma probes**
microwave equipment
. microwave probes
. . **microwave plasma probes**
RT electron probes
plasma flux measurement
plasmaguides
plasmas (physics)
resonance probes

microwave power beaming
(added November 1989)
UF *power transmission (microwave)*
GS power beaming
. **microwave power beaming**
RT laser power beaming
microwave transmission
satellite power transmission
spacecraft power supplies

microwave probes
GS measuring instruments
. **microwave probes**
. . microwave plasma probes
microwave equipment
. **microwave probes**
. . microwave plasma probes
RT radio frequency impedance probes

microwave radiation
USE **microwaves**

microwave radiometers
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . **microwave radiometers**
. . . . . Advanced Microwave Sounding Unit
microwave equipment
. **microwave radiometers**
. . Advanced Microwave Sounding Unit

microwave reflectometers
GS measuring instruments
. optical measuring instruments
. . reflectometers
. . . **microwave reflectometers**
optical equipment
. optical measuring instruments
. . reflectometers
. . . **microwave reflectometers**
RT kinematics

microwave resonance
GS resonance
. **microwave resonance**
RT cavity resonators
harmonic analysis
nonresonance

microwave scanning beam landing system
DEF Primary position sensor of Space Shuttle orbiter's navigation system during the autoland phase of the flight. Used for MSBLS.
UF *MSBLS*
GS landing aids
. microwave landing systems
. . **microwave scanning beam landing system**
microwave equipment
. **microwave scanning beam landing system**
navigation aids
. **microwave scanning beam landing system**
RT approach indicators
Space Shuttle orbiters
∞ systems

microwave scattering
GS scattering
. radio scattering
. . **microwave scattering**
. wave scattering
. . electromagnetic scattering
. . . **microwave scattering**
RT atmospheric scattering
microwave absorption
microwave signatures
scatterometers

microwave sensors
GS measuring instruments
. **microwave sensors**
. . Advanced Microwave Sounding Unit
RT ∞ instruments
radar receivers
∞ sensors
signal detectors
synthetic aperture radar

microwave signatures
(added September 1988)
GS signatures
. spectral signatures
. . **microwave signatures**
RT backscattering
microwave emission
microwave scattering
microwaves
radar signatures
signature analysis

microwave sounding
GS sounding
. **microwave sounding**
RT Advanced Microwave Sounding Unit
imagery
microwaves
NOAA 12 satellite
rocket sounding

microwave spectra
UF *interstellar microwave spectra*
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . radio spectra
. . . . **microwave spectra**
RT absorption spectra
infrared spectra
molecular rotation
molecular spectra
molecular spectroscopy

microwave spectrometers
GS measuring instruments
. spectrometers
. . **microwave spectrometers**

microwave switching
GS switching
. **microwave switching**
RT ferroelectricity
gyrators
packet switching
phase shift
switching circuits
waveguides

microwave transmission
GS transmission
. electromagnetic wave transmission
. . radio transmission
. . . **microwave transmission**
. signal transmission
. . radio transmission
. . . **microwave transmission**
RT ACTS
circular waveguides
domestic satellite communications systems
downlinking
Fleet Satellite Communication System
frequency reuse
laser power beaming
microstrip transmission lines
microwave absorption
microwave power beaming
power beaming
satellite solar energy conversion
satellite solar power stations
spacetennas
teletypewriter systems
uplinking
VSAT (network)
wave propagation
waveguides

microwave tubes
GS electron tubes
. vacuum tubes
. . **microwave tubes**
. . . celescopes
. . . cyclotron resonance devices
. . . klystrons
. . . magnetrons
. . . . nigotrons
. . . planotrons
. . . traveling wave tubes
. . . . backward wave tubes

. . . . . helitrons
. . . . carcinotrons
microwave equipment
. microwave tubes
. . celescopes
. . cyclotron resonance devices
. . klystrons
. . magnetrons
. . . nigotrons
. . planotrons
. . traveling wave tubes
. . . backward wave tubes
. . . . helitrons
. . . carcinotrons
RT diffraction radiation
gas discharge tubes
microwave oscillators
oscillators
photomultiplier tubes
phototubes
triodes
∞ tubes

microwaves
DEF Of, or pertaining to, radiation in the microwave region. Used for microwave radiation.
UF *microwave radiation*
GS electromagnetic radiation
. radio waves
. . short wave radiation
. . . **microwaves**
. . . . centimeter waves
. . . . decimeter waves
. . . . microwave emission
. . . . millimeter waves
RT cosmic noise
diffraction radiation
electromagnetic noise
extraterrestrial radio waves
infrared radiation
microwave absorption
microwave frequencies
microwave holography
microwave signatures
microwave sounding
∞ radiation
satellite solar energy conversion
satellite solar power stations
scatterometers
submillimeter waves
whistlers

microweighing
USE **weight measurement**

microyield strength
DEF Stress at which a microstructure (single crystal, for example) exhibits a specified deviation in its stress-strain relationship.
GS mechanical properties
. yield strength
. . **microyield strength**
RT elastic properties
∞ strength
stresses
yield point

micturition
USE **urination**

mid-ocean ridges
(added July 1992)
DEF Continuous, seismic, median mountain ranges extending through the North and South Atlantic Oceans, the Indian Ocean and the South Pacific Ocean. They are broad fractured swells with a central rift valley and usually rugged topography. They are 1-3 km in elevation, about 1500 km in width, and over 84,000 km in length. According to the hypothesis of sea floor spreading, the mid-ocean ridges are the source of crustal material.
UF *mid-oceanic ridges*
RT Atlantic Ocean
geological faults
Indian Ocean
ocean bottom
oceanography
Pacific Ocean
∞ ridges
sea floor spreading
seamounts
seismology

mid-oceanic ridges
USE **mid-ocean ridges**

midair collisions
GS collisions
. **midair collisions**
. . bird-aircraft collisions
RT air traffic control
aircraft accidents
aircraft hazards
aircraft safety
Beacon Collision Avoidance System
collision avoidance
crashes
flight hazards
flight safety
pilot error
threat evaluation

midaltitude
DEF The average of many measurements of altitudes as with satellite instruments for the compiling of planetary maps.
GS altitude
. **midaltitude**
RT flight altitude
high altitude
low altitude

Midas 2 satellite
GS artificial satellites
. Midas satellites
. . **Midas 2 satellite**
military spacecraft
. reconnaissance spacecraft
. . Midas satellites
. . . **Midas 2 satellite**

Midas 3 satellite
GS artificial satellites
. Midas satellites
. . **Midas 3 satellite**
military spacecraft
. reconnaissance spacecraft
. . Midas satellites
. . . **Midas 3 satellite**

Midas 4 satellite
GS artificial satellites
. Midas satellites
. . **Midas 4 satellite**
military spacecraft
. reconnaissance spacecraft
. . Midas satellites
. . . **Midas 4 satellite**

Midas 5 satellite
GS artificial satellites
. Midas satellites
. . **Midas 5 satellite**
military spacecraft
. reconnaissance spacecraft
. . Midas satellites
. . . **Midas 5 satellite**

Midas 6 satellite
GS artificial satellites
. Midas satellites
. . **Midas 6 satellite**
military spacecraft
. reconnaissance spacecraft
. . Midas satellites
. . . **Midas 6 satellite**

Midas 7 satellite
GS artificial satellites
. Midas satellites
. . **Midas 7 satellite**
military spacecraft
. reconnaissance spacecraft
. . Midas satellites
. . . **Midas 7 satellite**

Midas satellites
GS artificial satellites
. **Midas satellites**
. . Midas 2 satellite
. . Midas 3 satellite
. . Midas 4 satellite
. . Midas 5 satellite
. . Midas 6 satellite
. . Midas 7 satellite
military spacecraft
. reconnaissance spacecraft
. . **Midas satellites**
. . . Midas 2 satellite
. . . Midas 3 satellite
. . . Midas 4 satellite
. . . Midas 5 satellite
. . . Midas 6 satellite
. . . Midas 7 satellite
RT Atlas Agena B launch vehicle

midcourse guidance
GS guidance (motion)
. **midcourse guidance**
RT command guidance
inertial guidance
injection guidance
rendezvous guidance
spacecraft guidance
terminal guidance
transearth injection
translunar injection

midcourse trajectories
GS trajectories
. **midcourse trajectories**
RT ascent trajectories
ballistic trajectories
coasting flight
descent trajectories
parabolic flight

middle atmosphere
DEF The portion of the Earth's atmosphere extending from the troposphere to 100 kilometers.
GS Earth atmosphere
. **middle atmosphere**
. . mesosphere
. . . mesopause
. . stratosphere
. . . ozonosphere
. . . stratopause
RT air
air pollution
∞ atmospheres
atmospheric chemistry
atmospheric circulation
atmospheric composition

chemosphere
climatology
equatorial atmosphere
free atmosphere
heterosphere
homosphere
lower atmosphere
midlatitude atmosphere
tropopause
upper atmosphere
zonal flow (meteorology)

middle ear
GS anatomy
. sense organs
. . ear
. . . **middle ear**
RT semicircular canals

middle ear pressure
GS pressure
. **middle ear pressure**
RT ear pressure test
eardrums

Middle East
(added December 1995)
GS regions
. **Middle East**
RT Africa
Asia
Europe

midlatitude atmosphere
GS Earth atmosphere
. **midlatitude atmosphere**
environments
. **midlatitude atmosphere**
RT Earth ionosphere
middle atmosphere
sporadic E layer

midlatitudes
USE **temperate regions**

Mie scattering
DEF Any scattering produced by spherical particles without special regard to comparative size of radiation wavelength and particle diameter. Used for Mie theory.
UF *Mie theory*
GS scattering
. wave scattering
. . electromagnetic scattering
. . . **Mie scattering**
. . . . Rayleigh scattering

Mie theory
USE **Mie scattering**

MiG aircraft
DEF Any of a series of Soviet fighter aircraft, fighter-bombers, interceptors, and air supremacy aircraft, designed by Mikoyan.
GS attack aircraft
. fighter aircraft
. . **MiG aircraft**
single engine aircraft
. **MiG aircraft**
supersonic aircraft
. **MiG aircraft**
RT ∞ aircraft

migration
RT behavior
phenology
waterfowl

Mil aircraft
RT ∞ aircraft

Milankovitch theory
USE **climatology**

military air facilities
UF *aircraft bases*
RT air traffic control
∞ aircraft
aircraft carriers
airports
∞ facilities
∞ fields
hangars
heliports
landing aids
landing mats
navigation aids
stations

∞ **military aircraft**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT A-37 aircraft
AH-1G helicopter
AH-1S helicopter
AH-1W helicopter
AH-63 helicopter
AH-64 helicopter
∞ aircraft
aircraft carriers
aircraft survivability
airships
Alpha jet aircraft
antisubmarine warfare aircraft
armed forces
armed forces (foreign)
armed forces (United States)
attack aircraft
attacking (assaulting)
AWACS aircraft
B-1 aircraft
B-2 aircraft
bomber aircraft
C-1A aircraft
cargo aircraft
CH-62 helicopter
CL-600 challenger aircraft
drone aircraft
drone vehicles
E-2 aircraft
E-3A aircraft
E-4A aircraft
fighter aircraft
Firebee 2 target drone aircraft
FV-12A aircraft
gliders
ground effect machines
H-60 Helicopter
Harrier aircraft
helicopters
Jaguar aircraft
jet aircraft
light aircraft
∞ military aviation
military helicopters
MRCA aircraft
nuclear propelled aircraft
observation aircraft
passenger aircraft
pilotless aircraft
reconnaissance aircraft
research aircraft
rotary wing aircraft
S-3 aircraft
short takeoff aircraft
SR-71 aircraft
submersible aircraft
tailless aircraft
tanker aircraft
target drone aircraft
training aircraft
transport aircraft
utility aircraft
V-22 aircraft
V/STOL aircraft
vertical takeoff aircraft
weapon systems
YC-14 aircraft
YF-12 aircraft

∞ **military aviation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ aeronautics
air law
armed forces
aviation meteorology
bomber aircraft
fighter aircraft
∞ military aircraft
reconnaissance aircraft

military compact reactors
UF *MCR reactors*
GS nuclear reactors
. liquid cooled reactors
. . liquid metal cooled reactors
. . . **military compact reactors**
. nuclear research and test reactors
. . **military compact reactors**

military helicopters
GS V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **military helicopters**
. . . . AH-1G helicopter
. . . . AH-1S helicopter
. . . . AH-1W helicopter
. . . . AH-63 helicopter
. . . . AH-64 helicopter
. . . . BO-105 helicopter
. . . . CH-3 helicopter
. . . . CH-21 helicopter
. . . . CH-34 helicopter
. . . . CH-46 helicopter
. . . . CH-47 helicopter
. . . . CH-54 helicopter
. . . . CH-62 helicopter
. . . . H-19 helicopter
. . . . H-43 helicopter
. . . . H-53 helicopter
. . . . H-54 helicopter
. . . . H-58 helicopter
. . . . H-60 Helicopter
. . . . HC-3 helicopter
. . . . HH-43 helicopter
. . . . HH-65 helicopter
. . . . OH-4 helicopter
. . . . OH-5 helicopter
. . . . OH-6 helicopter
. . . . OH-13 helicopter
. . . . OH-23 helicopter
. . . . OH-58 helicopter
. . . . P-531 helicopter
. . . . QH-50 helicopter
. . . . S-67 helicopter
. . . . SA-321 helicopter
. . . . SA-330 helicopter
. . . . SH-3 helicopter
. . . . SH-4 helicopter
. . . . Sikorsky Whirlwind helicopter

. . . . UH–1 helicopter
. . . . UH–2 helicopter
. . . . UH–34 helicopter
. . . . UH–60A helicopter
. . . . UH–61A helicopter
. . . . Westland Whirlwind helicopter
. . . . XV–9A aircraft
RT ∞ aircraft
attack aircraft
EH–101 helicopter
light helicopters
∞ military aircraft
reconnaissance aircraft
terrain following

military operations
GS military operations
. combat
. electronic warfare
RT deployment
tactics
tanks (combat vehicles)

military psychiatry
USE military psychology

military psychology
UF *military psychiatry*
GS psychology
. military psychology
RT aviation psychology
psychiatry
psychological effects
psychological tests
psychometrics
space psychology

military spacecraft
GS military spacecraft
. DMSP satellites
. reconnaissance spacecraft
. . Inspector satellite
. . Midas satellites
. . . Midas 2 satellite
. . . Midas 3 satellite
. . . Midas 4 satellite
. . . Midas 5 satellite
. . . Midas 6 satellite
. . . Midas 7 satellite
. . photo reconnaissance spacecraft
. . Samos
. Vela satellites
RT aerospace planes
armed forces
artificial satellites
Columbus space station
evasive satellites
manned spacecraft
meteorological satellites
∞ military vehicles
navigation satellites
recoverable spacecraft
rendezvous spacecraft
satellite networks
space stations
space surveillance (spaceborne)
∞ spacecraft
synchronous satellites
unmanned spacecraft
weapon systems

military technology
GS technologies
. military technology
RT antimissile defense
antiradiation missiles
antisubmarine warfare
armed forces (foreign)
armed forces (United States)
Army–Navy instrumentation program
AWACS aircraft
Ballistic Missile Early Warning System
defense communications system (DCS)
defense industry
defense program
deployment
Fleet Satellite Communication System
interservice data exchange program
laser weapons
logistics over the shore (LOTS) carrier
missile defense
optical countermeasures
radar homing missiles
Safeguard system
tactics
weapons
weapons delivery
weapons industry

∞ **military vehicles**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aerospatic vehicles
aircraft carriers
ambulances
amphibious vehicles
armed forces
armed forces (foreign)
armed forces (United States)
automobiles
boats
military spacecraft
recovery vehicles
research vehicles
ships
submarines
tanks (combat vehicles)
trucks
underwater vehicles
∞ vehicles
water vehicles

milk
RT beverages
∞ food

Milky Way Galaxy
DEF The galaxy to which the sun belongs.
GS celestial bodies
. galaxies
. . spiral galaxies
. . . Milky Way Galaxy
RT galactic bulge
local group (astronomy)
Orion nebula
radio sources (astronomy)
solar neighborhood
stars

millet
GS farm crops
. grains (food)
. . millet
plants (botany)
. millet
RT Earth resources
flour (food)
∞ food
grasses

millimeter waves
GS electromagnetic radiation
. radio waves
. . short wave radiation
. . . microwaves
. . . . millimeter waves
RT beam plasma amplifiers
C band
CN emission
cyclotron resonance devices
decimeter waves
electromagnetic noise
extraterrestrial radio waves
extremely high frequencies
frequencies
solar radio emission
submillimeter waves
wavelengths

∞ **milling**
NT
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT comminution
compounding

milling (machining)
GS cutting
. milling (machining)
machining
. milling (machining)
RT chemical machining
grooving
metal cutting
planing

milling (mixing)
USE compounding

milling machines
GS tools
. machine tools
. . milling machines
RT grinding machines
∞ machinery
shapers

millivoltmeters
GS measuring instruments
. voltmeters
. . millivoltmeters
RT galvanometers

Mills ratio
GS ratios
. Mills ratio
RT failure
failure analysis
life (durability)
mortality
probability density functions
statistical analysis

Milne method
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . Milne method
RT differential equations
∞ methodology

Milne–Thomson method
RT incompressible flow
∞ methodology
Navier–Stokes equation
viscous flow

MIM (semiconductors)
UF *metal–insulator–metal semiconductors*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . MIM (semiconductors)
semiconductors (materials)

. **MIM (semiconductors)**
RT SIS (semiconductors)

MIM diodes
DEF Junction diodes each consisting of an insulating layer sandwiched between two metallic surface layers and exhibiting a negative differential resistance in its V–I characteristics conceivably because of stimulated inelastic tunneling of electrons. Used for metal–insulator–metal diodes.
UF *metal–insulator–metal diodes*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . junction diodes
. . . . **MIM diodes**
. solid state devices
. . semiconductor devices
. . . junction diodes
. . . . **MIM diodes**
RT electron tunneling
MSM (semiconductors)
negative resistance devices
semiconductor diodes
tunnel diodes

Mimas
DEF A satellite of Saturn orbiting at a mean distance of 186,000 kilometers.
GS celestial bodies
. natural satellites
. . icy satellites
. . . **Mimas**
. . Saturn satellites
. . . **Mimas**
RT Saturn (planet)

MIMD (computers)
DEF A type of parallel processor that is essentially two or more individual computers with facilities for interaction and work sharing. Used for multiple instruction multiple data stream.
UF *multiple instruction multiple data stream*
GS data processing equipment
. computers
. . digital computers
. . . parallel computers
. . . . **MIMD (computers)**
RT architecture (computers)
computer design
computer programming
concurrent processing
interprocessor communication
operating systems (computers)
parallel processing (computers)
SIMD (computers)

MIMO (control systems)
(added January 1991)
UF *multiple input multiple output*
RT ∞ control
control stability
control systems design
control theory
feedback control
∞ systems
systems stability

mine detectors
GS warning systems
. **mine detectors**
RT ∞ detectors
warning

Miner rule
USE **Palmgren–Miner rule**

mineral deposits
RT contacts (geology)
dredging
Earth resources
excavation
geology
lunar mining
mineralogy
minerals
mines (excavations)
mining
reserves
strip mining
underwater resources

mineral exploration
GS exploration
. **mineral exploration**
RT anthracite
excavation
minerals
mines (excavations)
mining

mineral metabolism
GS metabolism
. **mineral metabolism**
RT body fluids
caloric requirements
endocrine systems
secretions

mineral oils
GS oils
. **mineral oils**
RT lubricating oils

mineralogy
RT chondrule
crystallography
geochemistry
geology
mineral deposits
minerals
petrogenesis
petrology
∞ physical sciences

minerals
DEF Naturally occurring inorganic elements or compounds having an orderly internal structure and characteristic chemical compositions, crystal forms, and physical properties.
UF *apatites*
ores
GS **minerals**
. akermanite
. amphiboles
. anatase
. aragonite
. asbestos
. barite
. bastnasite
. beryl
. . alexandrite
. bloedite
. brucite
. calcite
. chromites
. cohenite
. cordierite
. cryolite
. dawsonite
. dolomite (mineral)
. euxenite
. fayalite
. feldspars
. fluorite
. fluorspar
. garnets
. . gadolinium–gallium garnet
. . yttrium–aluminum garnet
. . yttrium–iron garnet
. gehlenite
. graphite
. . pyrolytic graphite
. gypsum
. hexahedrite
. illite
. ilmenite
. iron ores
. . hematite
. kamacite
. kaolinite
. kreep
. limonite
. magnetite
. merwinite
. mica
. . biotite
. . fluorophlogopite
. . muscovite
. monticellite
. montmorillonite
. nepheline
. nephelite
. olivine
. . forsterite
. perovskites
. proustite
. pyrites
. pyrophyllite
. pyroxenes
. . enstatite
. pyrrhotite
. . troilite
. quartz
. . coesite
. . stishovite
. scheelite
. schreibersite
. serpentine
. siderites
. spinel
. spodumene
. talc
. tourmaline
. vermiculite
. wurtzite
. zincblende
RT aluminum silicates
andesite
bauxite
beneficiation
biogeochemistry
bone mineral content
boreholes
calcium silicates
crystallites
diorite
dunite
Earth resources
felsite
fluorosilicates
geology
igneous rocks
impact melts
lava
limestone
lunar soil
mineral deposits
mineral exploration
mineralogy
monazite sands

mullites
∞ nutrients
obsidian
potassium silicates
rocks
rutile
shales
silicates
sodium silicates
soils
underground acoustics
zeolites

∞ mines
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT mines (excavations)
mines (ordnance)

mines (excavations)
UF *quarries*
RT core sampling
drainage
exploitation
exploration
lunar mining
materials handling
mineral deposits
mineral exploration
∞ mines
mining
pits (excavations)
reserves
stratigraphy
strip mining
subsidence
underground explosions
underground storage
underground structures
waste disposal

mines (ordnance)
GS weapons
. mines (ordnance)
RT ammunition
∞ mines

miniature electronic equipment
GS electronic equipment
. miniature electronic equipment
RT circuits
∞ electric equipment
electronic modules
∞ equipment
microminiaturization
microminiaturized electronic devices
micromodules
miniaturization
molecular electronics
printed circuits
solid state devices
subminiaturization
thin films

miniaturization
GS miniaturization
. microminiaturization
. subminiaturization
RT circuits
miniature electronic equipment
printed circuits
printed resistors
transistors
wafers

minicomputers
GS data processing equipment
. computers
. . digital computers
. . . minicomputers
. . . . Nova computers
RT airborne/spaceborne computers
Atmospheric & Oceanographic Inform Sys
microcomputers

minima
GS analysis (mathematics)
. real variables
. . extremum values
. . . minima
. . . . Cramer–Rao bounds
RT cusps (mathematics)
differential calculus
maxima
operations research
optimization
penalty function
range (extremes)
steepest descent method

minimal surfaces
DEF Surfaces for which the first variation of the area integral vanish.
RT boundary value problems
conformal mapping
finite element method
∞ surfaces

minimax technique
RT approximation
curve fitting
game theory
operations research
research
saddle points

minimization
USE optimization

minimum drag
GS dynamic characteristics
. drag
. . minimum drag
RT aircraft performance
friction drag

minimum entropy method
DEF Application of entropy in statistical mechanics.
GS entropy (statistics)
. minimum entropy method
RT ∞ methodology

minimum variance orbit determination
UF *MINIVAR orbit determination*
GS classical mechanics
. space mechanics
. . orbital mechanics
. . . minimum variance orbit determination
computation
. orbit calculation
. . minimum variance orbit determination
RT statistical analysis

mining
GS mining
. lunar mining
. strip mining
RT anthracite
clays
dredging
energy policy
excavation
exploitation
mineral deposits
mineral exploration
mines (excavations)
underground structures

minitrack optical tracking system
USE minitrack system

minitrack system
DEF A satellite tracking system consisting of a field of separate antennas and associated receiving equipment interconnected so as to form interferometers which track a transmitting beacon in the payload itself. Used for minitrack optical tracking system and MOTS (tracking system).
UF *minitrack optical tracking system*
MOTS (tracking system)
RT Global Tracking Network
optical tracking
satellite tracking
space detection and tracking system
space surveillance (ground based)
spacecraft tracking
STDN (network)
∞ systems
tracking networks
tracking stations
∞ tracks

MINIVAR orbit determination
USE minimum variance orbit determination

Minkowski space
RT Feynman diagrams
light-cone expansion
probability theory
space–time functions

Minnesota
GS nations
. United States
. . Minnesota

minor circle turning flight
GS turning flight
. minor circle turning flight
RT aircraft control
maneuvers

Minor Planet 1221
USE Amor asteroid

Minor Planet 2060
USE Chiron

minor planets
USE asteroids

minorities
RT American Indians
anthropology
communities
culture (social sciences)
nations
races (anthropology)
sociology
voting

minority carriers
GS charge carriers
. minority carriers
RT additives
bipolar transistors
carrier injection
carrier lifetime
diffusion length
electron mobility
electrons
holes (electron deficiencies)

semiconductors (materials)

MINOS computer
GS data processing equipment
. computers
. . MINOS computer

Minuteman ICBM
UF *Minuteman missiles*
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Minuteman ICBM
. surface to surface missiles
. . intercontinental ballistic missiles
. . . Minuteman ICBM
RT M-55 engine
M-56 engine
M-57 engine
multistage rocket vehicles
solid propellant rocket engines
space weapons

Minuteman missiles
USE Minuteman ICBM

miosis
RT eye (anatomy)
ophthalmology
tetrad theory
vision

Mir space station
DEF The Soviet space station launched February 20, 1986; its name means peace or world in Russian. It is a manned, modular, permanent, and multi-mission station.
GS artificial satellites
. space stations
. . Mir space station
. . . Kvant module
. . . Priroda module
manned spacecraft
. Mir space station
. . Kvant module
. . Priroda module
Soviet spacecraft
. Mir space station
. . Kvant module
. . Priroda module
stations
. space stations
. . Mir space station
. . . Kvant module
. . . Priroda module
RT Granat satellite
International Space Station
space bases
space laboratories
spacecraft docking
U.S.S.R. space program

Mira Ceti star
USE Omicron Ceti star

Mira variables
DEF Long-period (80 to over 600 days) variable stars of red giant or red supergiant type, exemplified by the star Mira Ceti. Used for long period variables.
UF *long period variables*
GS celestial bodies
. stars
. . late stars
. . . cool stars
. . . . Mira variables
. . . . . Omicron Ceti star
. . variable stars
. . . Mira variables
. . . . Omicron Ceti star
RT asymptotic giant branch stars
carbon stars
M stars
red giant stars
S stars
stellar oscillations
supergiant stars

Mirage 3 aircraft
UF *Dassault Mirage 3 aircraft*
GS attack aircraft
. fighter aircraft
. . Mirage aircraft
. . . Mirage 3 aircraft
Dassault aircraft
. Mirage aircraft
. . Mirage 3 aircraft
jet aircraft
. Mirage aircraft
. . Mirage 3 aircraft
monoplanes
. Mirage aircraft
. . Mirage 3 aircraft
single engine aircraft
. Mirage aircraft
. . Mirage 3 aircraft
supersonic aircraft
. Mirage aircraft
. . Mirage 3 aircraft
tailless aircraft
. Mirage 3 aircraft

Mirage aircraft
DEF Collective term for a class of French attack aircraft.
GS attack aircraft
. fighter aircraft
. . Mirage aircraft
. . . Mirage 3 aircraft
Dassault aircraft
. Mirage aircraft
. . Mirage 3 aircraft
jet aircraft
. Mirage aircraft
. . Mirage 3 aircraft
monoplanes
. Mirage aircraft
. . Mirage 3 aircraft
single engine aircraft
. Mirage aircraft
. . Mirage 3 aircraft
supersonic aircraft
. Mirage aircraft
. . Mirage 3 aircraft

Miranda
DEF A satellite of Uranus orbiting at a mean distance of 124,000 kilometers.
GS celestial bodies
. natural satellites
. . Uranus satellites
. . . Miranda
RT Uranus (planet)

Miranda satellite
DEF This United Kingdom satellite was launched in 1974 into a sun synchronous, low Earth orbit. Prime objective of the mission was to experiment with satellite attitude control. It ceased to operate the same year it was launched.
GS artificial satellites
. scientific satellites
. . UK satellites
. . . Miranda satellite
synchronous satellites
. . Miranda satellite
RT attitude control

Mirce system
UF *modulating retrodirective optics*
GS modulation
. light modulation
. . Mirce system
RT optical measuring instruments
∞ systems

mirror fusion
DEF An open-ended configuration which traps low beta plasmas. It is realized by associating two identical magnetic mirrors having the same axis.
RT fusion reactors
magnetic mirrors
nuclear fusion
plasma control
tandem mirrors
thermal barriers (plasma control)

mirror point
RT magnetic mirrors
radiation belts

mirrors
GS mirrors
. celescopes
. etalons
. Fresnel reflectors
. honeycomb mirrors
. magnetic mirrors
. . tandem mirrors
. paraboloid mirrors
. rotating mirrors
. segmented mirrors
. soilettas
RT Bragg reflectors
Cassegrain optics
circumscribed telescopes
collimators
heliostats
optical equipment
optical materials
optical resonators
∞ optics
reflecting telescopes
reflectors
solar collectors
solar reflectors
specular reflection
telescopes
x ray optics

MIS (semiconductors)
UF *metal insulator semiconductors*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . MIS (semiconductors)
semiconductors (materials)
. MIS (semiconductors)
RT SIS (semiconductors)

misalignment
SN (EXCLUDES PSYCHOLOGICAL DISORIENTATION)
UF *misorientation*
RT attitude (inclination)
disorientation
position (location)

miscibility
USE solubility

miscibility gap
RT phase separation (materials)

solubility
space processing
temperature dependence

MISFETs
USE field effect transistors

mismatch (electrical)
DEF Condition in which the impedance of a source does not match or equal the impedance of the connected load or transmission line.
RT electrical measurement
impedance measurement
matching

misorientation
USE misalignment

miss distance
GS distance
. miss distance
RT accuracy
air to surface missiles

missile antennas
GS antennas
. missile antennas
missile components
. missile antennas
RT aircraft antennas
directional antennas
microwave antennas

missile bodies
UF *missile cases*
GS missile components
. missile bodies
RT airframes
axisymmetric bodies
blunt bodies
∞ bodies
cases (containers)
finned bodies
rocket engine cases
slender bodies
streamlined bodies

missile cases
USE missile bodies

missile components
GS missile components
. missile antennas
. missile bodies
RT ∞ components
engines
fins
nose cones
warheads
wings

missile configurations
GS missile configurations
. Sandpiper target missile
RT aerodynamic configurations
aircraft configurations
∞ configurations
hammerhead configuration
launch vehicle configurations
missiles
multiengine vehicles
Patriot missile
propulsion system configurations
rocket engines
rocket vehicles

missile construction
USE missile structures

missile control
UF *missile guidance*
missile stabilization
RT actuators
analog computers
attitude control
automatic control
automatic flight control
beam rider guidance
∞ control
directional control
flight control
ground based control
homing
laser guidance
lateral control
longitudinal control
missiles
radar homing missiles
radio control
remote control
rocket engine control
spacecraft control
star trackers
thrust vector control
visual control

missile defense
SN (SYSTEMS DESIGNED TO PROTECT MISSILES AGAINST ATTACK)
RT antimissile defense
antimissile missiles
antiradiation missiles
ballistic missile decoys
∞ defense
defense industry
defense program
hardening (systems)
military technology
missiles
optical countermeasures
reentry decoys
Safeguard system
weapons delivery

missile design
RT aerospace engineering
aircraft design
computer aided design
∞ design
∞ development
engine design
flight tests
functional design specifications
Magnus effect
reliability
structural design
systems engineering

missile detection
GS detection
. missile detection
RT early warning systems
electronic warfare
identifying
target acquisition
target recognition

missile engine cases
USE rocket engine cases

missile guidance
USE missile control

missile launchers
GS launchers
. missile launchers
. . mobile missile launchers
RT ballistic missile submarines
catapults
ground support equipment
gun launchers
launch vehicles
launching
launching sites
missiles
rocket launchers
sea launching
weapon systems

missile ranges
SN (EXCLUDES DISTANCE OF MISSILE TRAVEL)
GS ranges (facilities)
. test ranges
. . missile ranges
test facilities
. test ranges
. . missile ranges
RT ballistic ranges
downrange
hypersonic test apparatus
missiles
range safety
reentry range

missile signatures
GS signatures
. missile signatures
RT detection
signature analysis
target recognition

missile silos
UF *silos (missile storage)*
RT buildings
launching sites
MX missile
∞ storage

∞ **missile simulators**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT computerized simulation
flight simulators
mathematical models
missiles
simulators
training simulators
wind tunnel models

missile stabilization
USE missile control
stabilization

missile storage
RT ground support equipment
mobile missile launchers
propellant storage
∞ storage
underground storage

missile structures
UF *missile construction*
RT airframes
∞ structures
tail assemblies

missile systems
GS weapon systems
. missile systems
. . Nike X systems
. . Safeguard system
RT aerospace systems
beam rider guidance
mobile missile launchers

radar homing missiles
∞ systems

missile tests
RT captive tests
engine tests
flight tests
fuel tests
ground tests
missiles
prelaunch tests
propellant tests
stability tests
static tests
test firing
test vehicles
∞ tests
wind tunnel stability tests

missile tracking
GS tracking (position)
. **missile tracking**
RT infrared tracking
laser target designators
polystation doppler tracking system
range and range rate tracking
space detection and tracking system
spacecraft tracking
tracking networks
tracking stations

missile trajectories
GS trajectories
. **missile trajectories**
RT ascent trajectories
ballistic trajectories
Cobra Dane (radar)
descent trajectories
flight mechanics
flight paths
impact prediction
parabolic flight
reentry trajectories
spinning unguided rocket trajectory
underwater trajectories

missile vibration
GS vibration
. structural vibration
. . **missile vibration**
RT bending vibration
breathing vibration
flutter
linear vibration
random vibration
self induced vibration
supersonic flutter
torsional vibration
transonic flutter

missiles
DEF Any objects thrown, dropped, fired, launched, or otherwise projected with the purpose of striking a target.
GS **missiles**
. air slew missiles
. air to air missiles
. . Falcon missile
. . Matra missile
. . Sidewinder missiles
. . Sparrow missiles
. . . Sparrow 2 missile
. . . Sparrow 3 missile
. air to surface missiles
. . Bullpup missiles
. . Condor missile
. . Harpoon missile
. . Hound Dog missile
. . Maverick missiles
. . quail missile
. . Shrike missile
. Antelope missile
. antiaircraft missiles
. . BOMARC missiles
. . . BOMARC A missile
. . . BOMARC B missile
. . Falcon missile
. . Mauler missile
. . Nike–Ajax missile
. . Nike–Hercules missile
. . Redeye missile
. . SIAM missiles
. . Sidewinder missiles
. . tartar missile
. . terrier missile
. antimissile missiles
. . Mauler missile
. . Nike–Zeus missile
. . Spartan missile
. . Sprint missile
. antiradiation missiles
. antiship missiles
. ballistic missiles
. . field army ballistic missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
. . . Minuteman ICBM
. . . MX missile
. . . Titan ICBM
. . . . Titan 1 ICBM
. . . . Titan 2 ICBM
. . intermediate range ballistic missiles
. . . Blue Streak missile
. . . Jupiter missile
. . . polaris missiles
. . . . Polaris A1 missile
. . . . Polaris A2 missile
. . . . Polaris A3 missile
. . Pershing missile
. . Poseidon missiles
. . short range ballistic missiles
. . Skybolt missile
. . Subroc missile
. . V–2 missile
. Blue Steel missile
. Bumblebee project
. Corvus missile
. Osprey missile
. precision guided projectiles
. radar homing missiles
. ramjet missiles
. . Navaho missile
. . supersonic low altitude missile
. Sandpiper target missile
. SS–11 missile
. surface to air missiles
. . Blue Goose missile
. . BOMARC missiles
. . . BOMARC A missile
. . . BOMARC B missile
. . Chaparral missile
. . Hawk missile
. . Mauler missile
. . Nike missiles
. . . Nike–Ajax missile
. . . Nike–Hercules missile
. . . Nike–Zeus missile
. . Patriot missile
. . Redeye missile
. . Sprint missile
. . Talos missile
. . tartar missile
. . terrier missile
. surface to surface missiles
. . antitank missiles
. . . Shillelagh missiles
. . . tow missiles
. . Corporal missile
. . cruise missiles
. . . Navaho missile
. . . Tomahawk missiles
. . fleet ballistic missiles
. . . Polaris A1 missile
. . . Polaris A2 missile
. . . Polaris A3 missile
. . . Poseidon missiles
. . . Subroc missile
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
. . . Minuteman ICBM
. . . MX missile
. . . Titan ICBM
. . . . Titan 1 ICBM
. . . . Titan 2 ICBM
. . intermediate range ballistic missiles
. . . Blue Streak missile
. . . Jupiter missile
. . . polaris missiles
. . . . Polaris A1 missile
. . . . Polaris A2 missile
. . . . Polaris A3 missile
. . Lance missile
. . Mace missiles
. . Pershing missile
. . Regulus missile
. . sergeant missiles
. . short range ballistic missiles
. . supersonic low altitude missile
. . V–1 missile
. underwater to surface missiles
. . Subroc missile
RT ammunition
antimissile defense
antiship warfare
artillery
ascent propulsion systems
auxiliary propulsion
bombs (ordnance)
electromagnetic missiles
flight test vehicles
∞ flight vehicles
ground support equipment
guidance (motion)
homing devices
hypersonic flight
incendiary ammunition
launch vehicles
launching sites
missile configurations
missile control
missile defense
missile launchers
missile ranges
∞ missile simulators
missile tests
multiengine vehicles
Nike X systems
nuclear weapons
plasma sheaths
propulsion
reentry
reentry vehicles
rocket catapults

RT rocket engines
rocket propellants
∞ rockets
∞ SCRAM
spacecraft launching
spin stabilization
stage separation
supersonic combustion ramjet engines
supersonic flight
terminal ballistics
test vehicles
torpedoes
trajectories
transportation
∞ vehicles
warheads
weapon systems
weapons
∞ winged vehicles

missing mass (astrophysics)
DEF A problem related to a cluster of galaxies in which the mass derived from the dynamical stability of its member galaxies, the dynamical mass, is substantially larger than the mass estimated by the mass-to-luminosity ratio of the visible parts of the galaxies, the visible mass.
GS cosmology
. **missing mass (astrophysics)**
mass
. **missing mass (astrophysics)**
RT astronomy
astrophysics
dark matter
dynamic stability
galactic clusters
galactic halos
galactic structure
mass distribution
mass to light ratios
virial theorem

mission adaptive wings
GS airfoils
. wings
. . **mission adaptive wings**
RT adaptive control
F-111 aircraft
gust alleviators
variable geometry structures
variable sweep wings
wing camber
wing profiles

mission planning
GS planning
. **mission planning**
RT budgeting
commerce lab
critical path method
estimating
forecasting
management
management planning
∞ missions
∞ operations
operations research
payload integration
∞ plans
predictions
prelaunch summaries
programs
project management
scheduling
Ulysses mission

Mission to Planet Earth
(added April 1995)
DEF A NASA initiated program that uses both space and ground based measurement systems to provide the scientific basis for understanding global change.
UF *MTPE*
GS programs
. NASA programs
. . **Mission to Planet Earth**
RT climate change
Earth Observing System (EOS)
geophysics
global warming
∞ missions
remote sensing
scientific visualization

∞ **missions**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aborted missions
asteroid missions
Astro missions (STS)
Cassini mission
Cluster Mission
Comet Rendezvous Asteroid Flyby Mission
Earth-Venus trajectories
expeditions
flyby missions
Galileo spacecraft
Grand Tours
Heat Capacity Mapping Mission
Landsat follow-on missions
long duration space flight
Mariner Jupiter-Saturn flyby
Mariner Jupiter-Uranus flyby
mission planning
Mission to Planet Earth
planning
programs
project planning
projects
Rosetta mission
SOHO Mission
Solar Maximum Mission
Solar Maximum Mission-A
space flight
space missions
Space Shuttle missions
targets
Ulysses mission
Voyager 1977 mission

Mississippi
GS nations
. United States
. . **Mississippi**
RT Gulf of Mexico

Mississippi Delta (LA)
GS landforms
. deltas
. . **Mississippi Delta (LA)**
RT Louisiana
rivers

Mississippi River (US)
GS rivers
. **Mississippi River (US)**
RT drainage patterns
Earth resources
floods
resources
river basins

Missouri
GS nations
. United States
. . **Missouri**
RT Missouri River (US)
St Louis-Kansas City Corridor (MO)

Missouri River (US)
GS rivers
. **Missouri River (US)**
RT Iowa
Kansas
Missouri
Montana
Nebraska
North Dakota
river basins
South Dakota
United States
valleys

Missouri River Basin (US)
GS landforms
. structural basins
. . river basins
. . . **Missouri River Basin (US)**
RT rivers
watersheds

mist
SN (ATMOSPHERIC WATER)
DEF Liquid, usually water in the form of particles suspended in the atmosphere at or near the surface of the Earth; small water droplets floating or falling, approaching the form of rain, and sometimes distinguished from fog as being more transparent or as having particles perceptibly moving downward.
GS particles
. **mist**
RT aerosols
dispersions
fog
fog dispersal
haze
haze detection
precipitation (meteorology)

mistuning (turbomachinery)
(added July 1991)
RT rotating disks
∞ rotor blades
rotor blades (turbomachinery)
rotors
tuning
turbomachine blades
vibration

mitochondria
GS organelles
. **mitochondria**
RT cells (biology)
cytology

mitosis
GS cytogenesis
. **mitosis**
RT cell division
cells (biology)
chromosomes
cytology
cytoplasm
mutations
physiology
reproduction (biology)

mitre
RT fungi

plants (botany)

MIUS
USE **Modular Integrated Utility System**

mixed crystals
GS crystals
. **mixed crystals**
RT powder metallurgy
sintering

mixed flow
USE **multiphase flow**

mixed oxides
DEF Mixture of oxides, particularly of radioactive metals.
GS chalcogenides
. oxides
. . metal oxides
. . . **mixed oxides**
. . . . BSCCO superconductors
. . . . YBCO superconductors
RT high temperature superconductors
nuclear fuels
plutonium oxides
strontium oxides
uranium oxides

mixers
SN (EXCLUDES MIXING CIRCUITS)
RT admixtures
aeration
aerosols
agitation
baffles
blowers
carburetors
coalescing
contactors
∞ diffusers
∞ dispersion
feeders
grinding mills
mixing
mixtures
paddles
plows
plungers
separators
shakers
sprayers
stirring
tumbling motion

mixing
GS **mixing**
. colloiding
. compounding
. dissolving
. homogenizing
. laminar mixing
. premixing
. signal mixing
. suspending (mixing)
. turbulent mixing
RT aeration
agitation
blowing
chokes
diffusion
dilution
grinding (comminution)
jet mixing flow
liquid injection
metal powder
mixers
mixing layers (fluids)
mixing ratios
mixtures
premixed flames
∞ separation
shaking
spraying
swirling
tangling
trapped vortices
turbulence
vortices

mixing circuits
GS circuits
. **mixing circuits**
RT frequency converters
frequency synthesizers
heterodyning
preamplifiers

mixing depth
USE **mixing height**

mixing height
DEF The heights of the layer through which the atmosphere is well mixed. The height will vary with diurnal, seasonal, and regional variations. Used for mixing depth.
UF *mixing depth*
RT air pollution
atmospheric circulation
convection
convection currents
vertical air currents
wind (meteorology)
zonal flow (meteorology)

mixing layers (fluids)
(added September 1988)
DEF Fluid layers in which multicomponent mixing occurs.
RT advection
atmospheric boundary layer
atmospheric stratification
boundary layers
convection
Ekman layer
jet mixing flow
laminar mixing
∞ layers
mixing
mixing length flow theory
shear layers
turbulent boundary layer
turbulent mixing
two fluid models

mixing length flow theory
GS flow theory
. **mixing length flow theory**
kinetic theory
. transport theory
. . **mixing length flow theory**
RT mixing layers (fluids)
shear flow
∞ theories
turbulence models
turbulent flow
turbulent mixing
vorticity transport hypothesis

mixing ratios
(added September 1993)
GS dimensionless numbers
. **mixing ratios**
ratios
. mass ratios
. . **mixing ratios**
RT atmospheric composition
atmospheric moisture
gas mixtures
gaseous diffusion
humidity
mixing
moisture content
water vapor

mixtures
UF *blends*
GS **mixtures**
. admixtures
. binary mixtures
. binary fluids
. . eutectics
. . . eutectic alloys
. dispersions
. . colloids
. . . aerosols
. . . . fog
. . . colloidal propellants
. . emulsions
. . . photographic emulsions
. . . . nuclear emulsions
. . liquid–gas mixtures
. . . aerosols
. . . . fog
. . plastisols
. . . smoke
. polymer blends
. slaion
. slurries
. solid suspensions
. solutions
. . aqueous solutions
. . gas mixtures
. . . air
. . . . alveolar air
. . . . compressed air
. . . . expired air
. . . . high temperature air
. . . . liquid air
. . . detonable gas mixtures
. . photographic emulsions
. . . nuclear emulsions
. . solid solutions
RT alloys
azeotropes
∞ combination
composite materials
composition (property)
dissolved gases
eutectic composites
formulations
ingredients
mixers
mixing
paste (consistency)
solubility

ML–1 nuclear power plant
GS electric power plants
. nuclear power plants
. . **ML–1 nuclear power plant**
nuclear electric power generation
. nuclear power plants
. . **ML–1 nuclear power plant**
RT ∞ power plants

MLA
USE **multispectral linear arrays**

MMS
USE **multimission modular spacecraft**

mnemonics
RT memory
nomenclatures
symbolic programming
symbols

MNOS
USE **metal-nitride-oxide-silicon**

mobile communication systems
DEF Any configuration of mobile or transportable voice and data communication equipment which allows for communication between combinations of mobile/fixed points with or without the aid of satellites.
GS **mobile communication systems**
. land mobile satellite service
RT communication satellites
MSAT
radio communication

mobile lounges
RT airfield surface movements
airports
ground handling
∞ lounges

mobile missile launchers
GS launchers
. missile launchers
. . **mobile missile launchers**
RT ballistic missile submarines
missile storage
missile systems
weapon systems

mobile quarantine facility
RT aerospace medicine
evacuating (transportation)
∞ facilities
medical equipment
medical services
physical examinations
physiological tests

mobility
SN (EXCLUDES CONSIDERATIONS OF MANNED AND UNMANNED CRAFT)
GS **mobility**
. atomic mobilities
. carrier mobility
. . electron mobility
. . hole mobility
. ionic mobility
RT ∞ conductivity
diffusivity
drift rate
Hall effect
kinetic theory
portable equipment
transport properties

MOCVD (vapor deposition)
USE **metalorganic chemical vapor deposition**

modal response
UF *mode shapes*
GS responses
. **modal response**
RT dynamic response
shaking tests

Modcomp II computer
GS data processing equipment
. computers
. . digital computers
. . . **Modcomp II computer**

Modcomp IV computer
GS data processing equipment
. computers
. . digital computers
. . . **Modcomp IV computer**

∞ **mode**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT failure modes
mode (statistics)
modes

mode (statistics)
RT average
distribution moments
failure modes
mean
median (statistics)
∞ mode
modes
moments
quality control

mode coupling
USE **coupled modes**

mode of vibration
USE **vibration mode**

mode shapes
USE **modal response**

mode transformers
GS transducers
. **mode transformers**
transformers
. **mode transformers**
RT impedance matching
propagation modes
transmission lines
vibration mode
waveguide tuners

model reference adaptive control
DEF This deals with three parameters: an ideal adaptive control system whose response is agreed to be optimum; computer simulation in which both the model system and the actual system are subjected to the same stimulus; and parameters of the actual system which are adjusted to minimize the difference in the outputs of the model and the actual system. Used for MRAC (systems).
UF *MRAC (systems)*
GS automatic control
. adaptive control
. . **model reference adaptive control**
RT automata theory
autonomy
∞ control
control theory
cybernetics
dynamic control
feedback control
feedforward control
mathematical models
optimal control
self alignment
systems simulation

models
GS **models**
. aircraft models
. astronomical models
. . density wave model
. . stellar models
. atmospheric models
. . Atmospheric General Circulation Models
. . reference atmospheres
. breadboard models
. climate models
. dynamic models
. electroweak model
. environment models
. Gutenberg zone
. hydrology models
. Lighthill gas model
. mathematical models
. . analog simulation
. . BGK model
. . biological models (mathematics)
. . digital simulation
. . Mandelstam representation
. . Petri nets
. . Thomas–Fermi model
. . turbulence models
. . . Baldwin–Lomax turbulence model
. . . k–epsilon turbulence model
. . . k–omega turbulence model
. . Veneziano model
. nuclear models
. ocean models
. quark models
. . quark parton model
. scale models
. semispan models
. spacecraft models
. standard model (particle physics)
. static models
. three dimensional models
. two dimensional models
. vector dominance model
. wind tunnel models
. . powered models
RT analogs
dummies
layouts
pilot plants
replicas
simulators
test facilities

modems
UF *modulators–demodulators*
GS demodulators
. **modems**
modulators
. **modems**
RT data transmission
peripheral equipment (computers)
phase demodulators
phase modulation
pulse amplitude modulation
pulse communication
pulse duration modulation
pulse frequency modulation
pulse modulation
pulse position modulation

moderation (energy absorption)
GS energy absorption
. **moderation (energy absorption)**
. . thermalization (energy absorption)
. . . neutron thermalization
RT ∞ absorption
limiters (fusion reactors)
moderators

moderators
DEF Materials that have a high cross section for slowing down fast neutrons with a minimum of

absorption, e.g., heavy water, beryllium, used in reactor cores.
RT beryllium
blankets (fusion reactors)
graphite
heavy water
limiters (fusion reactors)
moderation (energy absorption)
neutron absorbers
nuclear reactors
reactor materials
water

modes
GS **modes**
. axial modes
. ballooning modes
. coupled modes
. failure modes
. laser modes
. modes (standing waves)
. propagation modes
. . whispering gallery modes
. pushbroom sensor modes
. vibration mode
. . uncoupled modes
RT ∞ mode
mode (statistics)
trapping modes (plasmas)

modes (standing waves)
GS modes
. **modes (standing waves)**
RT uncoupled modes
vibration

MODFETS
DEF Heterojunction field effect transistor device structures in which only the larger (Al, Ga)As bandgap is doped with donors while the GaAS layer is left undoped. This results in high electron mobilities due to spatially separated electrons and donors. Used for modulation doped FETs.
UF *modulation doped fets*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . heterojunction devices
. . . . high electron mobility transistors
. . . . . **MODFETS**
. . . transistors
. . . . field effect transistors
. . . . . **MODFETS**
. . . . high electron mobility transistors
. . . . . **MODFETS**
RT aluminum gallium arsenides
doped crystals
energy gaps (solid state)
gallium arsenides
indium arsenides
ion implantation

modification
USE **revisions**

Modular Integrated Utility System
DEF A joint NASA-HUD concept incorporating various utilities — electric power plant, water supply, heating and air conditioning, sewage treatment, and waste disposal into a single system having increased efficiency and economy. Use for MIUS.
UF *MIUS*
RT air conditioning
communities
electric power plants
heating
potable water
sewage treatment
∞ systems
utilities
waste disposal

modular ratios
GS mechanical properties
. **modular ratios**
ratios
. **modular ratios**
RT composite materials
stress ratio
structural analysis
structural engineering

modularity
RT architecture (computers)
avionics
computer programs
electronic modules
systems engineering

modulated continuous radiation
GS continuous radiation
. **modulated continuous radiation**
electromagnetic radiation
. **modulated continuous radiation**
RT coherent electromagnetic radiation
phase deviation
∞ radiation

modulating retrodirective optics
USE **Miros system**

modulation
DEF The variation in the value of some parameter characterizing a periodic oscillation. Specifically, variation of some characteristic of a radio wave, called the carrier wave, in accordance with instantaneous values of another wave, called the modulating wave. Used for carrier modulation.
UF *carrier modulation*
GS **modulation**
. amplitude modulation
. . quadrature amplitude modulation
. frequency modulation
. . feedback frequency modulation
. . FM/PM (modulation)
. . frequency shift keying
. . pulse frequency modulation
. intermodulation
. ionospheric cross modulation
. light modulation
. . Miros system
. . ultrasonic light modulation
. phase modulation
. . FM/PM (modulation)
. . phase shift keying
. . . binary phase shift keying
. . . quadrature phase shift keying
. polarization modulation
. pulse modulation
. . pulse amplitude modulation
. . pulse code modulation
. . . delta modulation
. . . differential pulse code modulation
. . pulse frequency modulation
. . pulse time modulation
. . . pulse duration modulation
. . . pulse position modulation
. traveling wave modulation
. velocity modulation
RT carrier frequencies
carrier waves
companding
crystallization
demodulation
demodulators
double sideband transmission
dynamic range
interference factor table
modulators
P.A.C.M. telemetry
pulse frequency modulation telemetry
radio transmission
remodulation
selective fading
telecommunication
wave interaction

modulation doped fets
USE **MODFETS**

modulation doping
DEF The process of doping only the larger bandgap of a heterojunction device with donors, while the other layer is left undoped. Since the electrons and donors are spatially separated, ionized impurity scattering is avoided and extremely high electron mobilities are obtained.
RT additives
donor materials
doped crystals
electron mobility
energy gaps (solid state)
heterojunction devices
heterojunctions
high electron mobility transistors
ion implantation
semiconductor devices
semiconductors (materials)

modulation transfer function
UF *MTF*
GS functions (mathematics)
. transfer functions
. . **modulation transfer function**
RT figure of merit
imaging techniques
optical measurement
optical transfer function
∞ performance
system effectiveness
systems analysis

modulators
DEF Devices to effect the process of modulation.
GS **modulators**
. Bragg cells
. light modulators
. modems
RT amplifiers
amplitude modulation
demodulators
electron tubes
frequency modulation
light modulation
matched filters
modulation
phase modulation
pulse modulation

modulators-demodulators
USE **modems**

modules
DEF 1, Self contained units of a launch vehicle or spacecraft that serve as building blocks for the overall structure. 2, A one package assembly of functionally associated electronic parts, usually a plug-in unit, so arranged as to function as a system or subsystem.
GS **modules**
. airlock modules

. chemical release modules
. electronic modules
. . micromodules
. local scientific survey module
. payload assist module
. power modules (STS)
. service modules
. spacecraft docking modules
. spacecraft modules
. . command modules
. . command service modules
. . landing modules
. . . lunar landing modules
. . . . Lunar Module
. . . . . Apollo lunar experiment module
. . . . . LSSM
. . . . . Lunar Module 5
. . . . . Lunar Module 7
. . . Mars Excursion Module
. . SIM
RT circuits
compartments
∞ components
instrument packages
space tugs
spare parts

modulus of elasticity
DEF The ratio of stress (nominal) to corresponding strain below the proportional limit of a material. It is expressed in force per unit area. Used for compliance (elasticity), elastic modulus, and Young modulus.
UF *compliance (elasticity)*
elastic modulus
Young modulus
GS mechanical properties
. elastic properties
. . **modulus of elasticity**
. . . dynamic modulus of elasticity
RT anelasticity
bending
Hookes law
hydroelasticity
Poisson ratio
proportional limit
∞ rigidity
shear properties
stiffness
stress-strain diagrams

Mohawk aircraft
USE **OV-1 aircraft**

Mohr circles
USE **fracture mechanics**

Moire effects
RT beat frequencies
birefringence
diffraction
∞ effects
fringe multiplication
interference grating
∞ methodology
Moire fringes
Moire interferometry
photoelastic analysis
Schlieren photography

Moire fringes
DEF The bands which appear in the Moire effect.
RT diffraction patterns
fringe multiplication
interference grating
Moire effects
stress analysis
stress concentration

Moire interferometry
DEF The use of intersecting families of curves as instruments for making precise measurement, the study of indices of refractions, etc. by utilizing the interference patterns.
GS interferometry
. **Moire interferometry**
RT diffraction patterns
holographic interferometry
Moire effects

moisture
GS moisture
. atmospheric moisture
. soil moisture
RT humidity
hygral properties
meteorological parameters
meteorology
water
water vapor

moisture content
UF *dampness*
water content
wetness
GS composition (property)
. concentration (composition)
. . **moisture content**
. . . atmospheric moisture
RT atmospheric composition
chemical properties
humidity
hydrothermal stress analysis
hygroscopicity
lysimeters
mixing ratios
soil moisture
water
water vapor

moisture detectors
USE **moisture meters**

moisture meters
UF *moisture detectors*
GS measuring instruments
. **moisture meters**
. . hygrometers
. . . psychrometers
RT chemical analysis
humidity
humidity measurement

moisture resistance
RT caulking
coatings
hydrothermal stress analysis
hygroscopicity
porosity
∞ resistance
sealing
waterproofing
weatherproofing

Mojave Desert (CA)
GS land
. deserts
. . **Mojave Desert (CA)**
RT arid lands
California
desertification
remote regions

MOL (orbital laboratories)
USE **manned orbital laboratories**

MOLABS
USE **lunar mobile laboratories**

∞ **mold**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Aspergillus
fungi
molds
rhizopus
rust fungi

moldavite
GS rocks
. igneous rocks
. . obsidian
. . . **moldavite**
RT glass
meteorites
soils

molding materials
GS **molding materials**
. sheet molding compounds
RT binders (materials)
casting
clays
cores
injection molding
∞ materials
molds
plasters
plastics
resin transfer molding
sand casting
sands
tents

Moldova
(added September 1994)
GS nations
. **Moldova**
RT Europe

molds
SN (EXCLUDES ORGANISMS)
RT casting
castings
dies
flat patterns
foundries
ingots
injection molding
mandrels
melting
∞ mold
molding materials
organic materials
∞ patterns
preforms
pressing (forming)
punches
resin transfer molding
sheet molding compounds
tablets
templates

molecular absorption
GS energy absorption
. radiation absorption
. . **molecular absorption**
RT ∞ absorption
atmospheric attenuation
Beer law

electromagnetic absorption
light transmission

molecular beam epitaxy
DEF Ultrahigh vacuum technique for growing very thin epitaxial layers of semiconductor crystals.
GS growth
. crystal growth
. . epitaxy
. . . **molecular beam epitaxy**
RT atomic layer epitaxy
indium aluminum arsenides

molecular beams
GS beams (radiation)
. particle beams
. . neutral beams
. . . **molecular beams**
RT atomic beams
atomic clocks
free molecular flow
ion beams
molecules
rarefied gas dynamics

molecular biology
GS life sciences
. **molecular biology**
RT biochemistry
∞ biology
eukaryotes
gene expression
genes
physiochemistry
prokaryotes

molecular bonds
USE **chemical bonds**

molecular chains
RT ∞ aliphatic compounds
chains
crystal lattices
macromolecules
monomers
netting (materials/structures)

molecular clouds
DEF Thickest and densest interstellar clouds consisting mainly of molecular hydrogen but also a high concentration of dust grains.
RT astronomical models
∞ clouds
cosmic dust
diffuse interstellar bands
galactic halos
hydrogen clouds
infrared cirrus (astronomy)
interstellar chemistry
interstellar gas
interstellar masers
interstellar matter
methylidyne
star formation

molecular clusters
(added January 1994)
RT agglomeration
atomic clusters
chemisorption
clumps
∞ clusters
fullerenes
metal clusters
nucleation

molecular collisions
GS collisions
. **molecular collisions**
particle interactions
. molecular interactions
. . **molecular collisions**
RT atomic collisions
BGK model
∞ interactions
particle collisions
rigid rotors (plasma physics)

molecular diffusion
GS diffusion
. **molecular diffusion**
RT atmospheric diffusion
diffusion coefficient
diffusion waves
dissociation
gaseous diffusion
gaseous self-diffusion
particle diffusion
self diffusion (solid state)
surface diffusion

molecular dissociation
USE **dissociation**

molecular dynamics
(added January 1994)
RT computerized simulation
crystal structure
∞ dynamics
microstructure
molecular interactions
∞ molecular physics
molecular trajectories
physical chemistry
statistical mechanics

molecular electronics
GS electrophysics
. **molecular electronics**
RT DTL integrated circuits
∞ electronics
integrated circuits
Langmuir-Blodgett films
large scale integration
linear integrated circuits
medium scale integration
microelectronics
microminiaturization
miniature electronic equipment
monomolecular films
pi-electrons
semiconductor devices
thin films
TTL integrated circuits
very large scale integration

molecular energy levels
GS level (quantity)
. energy levels
. . **molecular energy levels**
. . . intermolecular forces
. . . rotational states
. . . vibrational states
RT chemical energy
∞ energy
energy of formation
excimers
free energy
heat of solution
internal energy
∞ nuclear energy

molecular excitation
GS excitation
. **molecular excitation**
RT atomic excitations
energy levels
ionization
particle collisions
photoexcitation
rotational spectra
rotational states
vibrational states

molecular flow
SN (FLOW WITH KNUDSEN NUMBERS GREATER THAN 0.01—FOR SPECIFIC FLOWS IN THIS RANGE USE NARROWER TERMS—FOR DUCTED MOLECULAR FLOW USE KNUDSEN FLOW)
DEF The flow of gas through a duct under conditions such that the mean free path is greater than the largest dimension of a transverse section of the duct.
GS fluid flow
. gas flow
. . **molecular flow**
. . . slip flow
. . . transition flow
RT BGK model
boundary layer transition
continuum flow
Knudsen flow
low density flow
rarefied gas dynamics
transpiration

molecular gases
GS gases
. **molecular gases**
. . polar gases
. . polyatomic gases
. . . diatomic gases
RT association reactions
gas dynamics
monatomic gases
nonpolar gases
rarefied gases
real gases

molecular interactions
GS particle interactions
. **molecular interactions**
. . molecular collisions
RT association reactions
configuration interaction
dissociation
∞ interactions
intermolecular forces
internuclear properties
interstellar chemistry
ionic reactions
Lennard-Jones potential
mass flow
molecular dynamics
∞ molecular physics
transport theory

molecular ions
GS ions
. **molecular ions**
. . formyl ions
. . hydronium ions
. . vanadyl radical
RT amino radical
electron affinity
∞ molecular physics
positive ions

molecular orbitals
GS orbitals
. **molecular orbitals**
wave functions
. **molecular orbitals**
RT quantum chemistry

self consistent fields

molecular oscillations
GS oscillations
. **molecular oscillations**
RT argon lasers
carbon dioxide lasers
carbon monoxide lasers
gas lasers
oscillator strengths

molecular oscillators
GS oscillators
. **molecular oscillators**
RT lasers
masers
oscillator strengths
two-wavelength lasers
ultraviolet lasers

∞ **molecular physics**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT intermuclear properties
Mayer problem
molecular dynamics
molecular interactions
molecular ions
monatomic molecules
∞ physics
∞ science

molecular pumps
GS pumps
. vacuum pumps
. . **molecular pumps**
vacuum apparatus
. vacuum pumps
. . **molecular pumps**
RT plasma pumping
pump seals

molecular relaxation
UF *chemical relaxation*
vibrational relaxation
RT gas flow
population inversion
∞ relaxation
relaxation (mechanics)
relaxation time
shock waves
thermodynamics
vibration damping
vibrational spectra

molecular rotation
GS gyration
. rotation
. . **molecular rotation**
RT microwave spectra
Raman spectra
rigid rotors (plasma physics)
rotational spectra

molecular shields
DEF Furlable devices used in space vacuum research to permit deployment and retrieval of instruments and the performance of experiments without contamination.
RT contamination
high vacuum
instrument packages
spaceborne experiments

molecular sieves
USE **absorbents**

molecular spectra
GS spectra
. **molecular spectra**
. . electronic spectra
. . Raman spectra
. . rotational spectra
. . vibrational spectra
RT absorption spectra
electromagnetic spectra
emission spectra
energy spectra
infrared spectra
mass spectra
microwave spectra
oxygen spectra
solar spectra
stellar spectra
Swan bands
ultraviolet spectra
Vegard-Kaplan bands
visible spectrum

molecular spectroscopy
GS spectroscopy
. **molecular spectroscopy**
. . Raman spectroscopy
RT absorption spectra
electron spectroscopy
emission spectra
infrared spectroscopy
line spectra
microwave spectra
optogalvanic spectroscopy
rotational spectra
spectroscopic analysis
ultraviolet spectroscopy
vacuum spectroscopy
x ray spectroscopy

molecular structure
RT atomic interactions
atomic structure
biopolymer denaturation
complex compounds
configuration interaction
crystal lattices
hydrogen bonds
infrared spectroscopy
intermolecular forces
intramolecular structures
macromolecules
molecules
monatomic molecules
nuclear magnetic resonance
nuclear models
order-disorder transformations
polyatomic molecules
polywater
∞ structures
unimolecular structures
Wiswesser notations

molecular theory
RT Lighthill gas model
∞ theories

molecular trajectories
GS trajectories
. **molecular trajectories**
RT gas flow
molecular dynamics

molecular weight
DEF The weight of a given molecule expressed in atomic weight units.
GS **molecular weight**
. low molecular weights
RT macromolecules
molecules
monatomic molecules
polyatomic molecules
weight (mass)

molecules
DEF Aggregates of two or more atoms of a substance that exists as a unit. Used for macromolecules.
GS **molecules**
. macromolecules
. monatomic molecules
. polyatomic molecules
. . diatomic molecules
. . triatomic molecules
RT atoms
buckminsterfullerene
chemical bonds
∞ chemical compounds
ions
low molecular weights
molecular beams
molecular structure
molecular weight

moles
GS animals
. vertebrates
. . mammals
. . . **moles**

Moliere formula
USE **cosmic ray showers**
secondary cosmic rays
spatial distribution

Mollier diagram
UF *enthalpy-entropy diagrams*
GS charts
. graphs (charts)
. . **Mollier diagram**
diagrams
. **Mollier diagram**
RT enthalpy
entropy
equations of state
ideal fluids
isentrope
thermodynamics

molluska
GS animals
. invertebrates
. . **molluska**
. . . cephalopods
. . . . octopuses
. . . snails
RT shellfish

Molniya satellites
GS artificial satellites
. communication satellites
. . **Molniya satellites**
. Soviet satellites
. . **Molniya satellites**
RT electric discharges
radio relay systems
satellite networks
telecommunication
television transmission
U.S.S.R. space program

molten carbonate fuel cells
(added December 1986)
GS electric generators
. direct power generators
. . fuel cells
. . . **molten carbonate fuel cells**

electrochemical cells
. fuel cells
. . **molten carbonate fuel cells**
RT carbonates
molten salt electrolytes

molten salt electrolytes
GS conductors
. **electrolytes**
. . **molten salt electrolytes**
RT molten carbonate fuel cells

molten salt nuclear reactors
UF *MSRE reactors*
GS nuclear reactors
. **molten salt nuclear reactors**
RT∞ reactors

molten salts
DEF High temperature inorganic salt or mixtures of salts used for thermal energy storage, heat exchangers, high power electric batteries, heat treatment of alloys, etc.
RT halides
halites
inorganic compounds
nitrides
salt baths
∞ **salts**
sodium chlorides

melting
RT phenology
shedding

molybdates
GS molybdenum compounds
. **molybdates**
. . lead molybdates

molybdenum
GS chemical elements
. **molybdenum**
metals
. refractory metals
. . **molybdenum**
. transition metals
. . **molybdenum**
refractory materials
. refractory metals
. . **molybdenum**
RT molybdenum isotopes

molybdenum alloys
GS alloys
. heat resistant alloys
. . refractory metal alloys
. . . **molybdenum alloys**
. . . . Rene 41
. . . . Rene 63
. . . . Rene 77
. . . . Rene 95
refractory materials
. refractory metal alloys
. . **molybdenum alloys**
. . . Rene 41
. . . Rene 63
. . . Rene 77
. . . Rene 95
RT Hastelloy (trademark)
mulberry (alloy)
Permalloys (trademark)
stainless steels

molybdenum carbides
GS carbon compounds
. carbides
. . **molybdenum carbides**

molybdenum compounds
GS **molybdenum compounds**
. molybdates
. . lead molybdates
. molybdenum disulfides
. molybdenum oxides
RT∞ chemical compounds
Group 6B compounds
∞ metal compounds

molybdenum disulfides
GS chalcogenides
. sulfides
. . inorganic sulfides
. . . molybdenum sulfides
. . . . **molybdenum disulfides**
molybdenum compounds
. **molybdenum disulfides**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . molybdenum sulfides
. . . . **molybdenum disulfides**

molybdenum isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **molybdenum isotopes**
RT molybdenum

molybdenum oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **molybdenum oxides**
molybdenum compounds
. **molybdenum oxides**

molybdenum sulfides
GS chalcogenides
. sulfides
. . inorganic sulfides
. . . **molybdenum sulfides**
. . . . molybdenum disulfides
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **molybdenum sulfides**
. . . . molybdenum disulfides

MOSI (semiconductors)
UF *metal-oxide-metal semiconductors*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **MOSI (semiconductors)**
semiconductors (materials)
. **MOSI (semiconductors)**
RT ion implantation

moment distribution
GS distribution (property)
. **moment distribution**
RT angular distribution
force distribution
influence coefficient
loading moments
loads (forces)
mass distribution
method of moments
moments
moments of inertia
pressure distribution
static loads
stress concentration
structural analysis
structural design criteria

moments
GS **moments**
. bending moments
. dipole moments
. . electric moments
. . magnetic moments
. distribution moments
. . mean
. . orthogonality
. . standard deviation
. loading moments
. moments of inertia
. stability derivatives
. . pitching moments
. . rolling moments
. . yawing moments
. torque
RT method of moments
mode (statistics)
moment distribution
momentum
skewness
torsion
variance (statistics)

moments of inertia
UF *inertia moments*
GS moments
. **moments of inertia**
RT angular momentum
center of gravity
center of pressure
centroids
equations of motion
Euler equations of motion
inertia
inertia principle
Mach inertia principle
mass
mass distribution
moment distribution
pitching moments
rolling moments
stability derivatives
stress analysis
structural strain
torque
yawing moments

momentum
DEF Quantity of motion.
GS **momentum**
. angular momentum
RT classical mechanics
de Broglie wavelengths
∞ dynamics
moments
∞ motion
motion aftereffects
pendulums
turning flight

momentum energy
USE **kinetic energy**

momentum theory
RT conservation laws
Newton second law
∞ theories

momentum transfer
RT∞ dynamics
energy transfer
gas-liquid interactions
hydrodynamic ram effect
kinetic theory
kinetics
Prandtl number

transferring

Monaco
GS nations
. Monaco
RT Europe

monatomic gases
UF *atomic gases*
GS gases
. monatomic gases
RT Chapman–Enskog theory
molecular gases
rare gases
real gases

monatomic molecules
GS molecules
. monatomic molecules
RT atoms
chemical bonds
∞ chemical compounds
ions
low molecular weights
∞ molecular physics
molecular structure
molecular weight
positive ions

monaural signals
RT audio equipment
audio frequencies
auditory perception
auditory signals
loudspeakers
microphones
sound transmission

monazite sands
GS phosphorus compounds
. phosphates
. . monazite sands
sediments
. sands
. . monazite sands
soils
. sands
. . monazite sands
RT minerals
sedimentary rocks

Monel (trademark)
GS alloys
. nickel alloys
. . Monel (trademark)

Monge–Ampere equation
GS algebra
. nonlinear equations
. . Monge–Ampere equation
analysis (mathematics)
. real variable
. . differential equations
. . . partial differential equations
. . . . elliptic differential equations
. . . . . Monge–Ampere equation
. . nonlinear equations
. . . Monge–Ampere equation
RT boundary value problems
∞ equations

Mongolia
GS nations
. Mongolia
RT Asia

monitors
RT aircraft instruments
analyzers
conical scanning
counters
data recorders
∞ detectors
display devices
environmental monitoring
gas detectors
helmet mounted displays
in-flight monitoring
∞ instruments
∞ measurement
measuring instruments
optical scanners
pollution monitoring
radiation measuring instruments
scanning
warning
warning systems

monkeys
GS animals
. vertebrates
. . mammals
. . . primates
. . . . monkeys

monochromatic radiation
SN (LIMITED TO ELECTROMAGNETIC RADIATION)
GS electromagnetic radiation
. monochromatic radiation
RT beams (radiation)
Brillouin effect
coherent electromagnetic radiation
coherent light
∞ filters
gamma rays
infrared radiation
ionizing radiation
light (visible radiation)
long wave radiation
monochromatization
monochromators
polarized electromagnetic radiation
polarized light
∞ radiation
radio waves
short wave radiation
ultraviolet radiation
x rays

monochromatization
UF *interference monochromatization*
RT monochromatic radiation
particle energy
polarization (waves)

monochromators
GS measuring instruments
. monochromators
radiation sources
. monochromators
RT comparators
duochromators
goniometers
light sources
monochromatic radiation
optical equipment
optical measuring instruments
photogoniometers
spectrophotometers

monocoque structures
RT ∞ cylinders
shells (structural forms)
stressed-skin structures
∞ structures

monocrystals
USE **single crystals**

monocular vision
GS vision
. monocular vision
RT human factors engineering
motion perception
perception
space perception

monoethanolamine (MEA)
GS amines
. monoethanolamine (MEA)

monoids
GS algebra
. group theory
. . homomorphisms
. . . monoids

monolithic circuits
USE **integrated circuits**

monomers
DEF Low molecular weight substances consisting of molecules capable of reacting with like or unlike molecules to form a polymer.
RT dibasic compounds
dimers
molecular chains
oligomers
oxetane polymers
∞ polymers
prepolymers
trimers

monomolecular films
GS thin films
. monomolecular films
. . Langmuir–Blodgett films
RT energy absorption films
∞ films
integrated optics
∞ layers
molecular electronics
surface layers
surfactants
thin layer chromatography

monoplanes
GS monoplanes
. A-1 aircraft
. A-2 aircraft
. A-3 aircraft
. A-4 aircraft
. A-5 aircraft
. A-6 aircraft
. A-7 aircraft
. A-37 aircraft
. AN-22 aircraft
. AN-24 aircraft
. Argosy MK-1 aircraft
. AVRO 707 aircraft
. B-26 aircraft
. B-47 aircraft
. B-50 aircraft
. B-52 aircraft
. B-57 aircraft
. B-58 aircraft
. B-66 aircraft
. B-70 aircraft
. BAC 111 aircraft
. Beechcraft 18 aircraft
. Boeing 707 aircraft
. Boeing 720 aircraft
. Boeing 733 aircraft
. Boeing 737 aircraft

. Boeing 757 aircraft
. Boeing 767 aircraft
. Breguet 940 aircraft
. Breguet 941 aircraft
. Breguet 1150 aircraft
. Buccaneer aircraft
. C-2 aircraft
. C-33 aircraft
. C-35 aircraft
. C-46 aircraft
. C-47 aircraft
. C-54 aircraft
. C-118 aircraft
. C-121 aircraft
. C-123 aircraft
. C-124 aircraft
. C-130 aircraft
. C-131 aircraft
. C-133 aircraft
. C-135 aircraft
. C-140 aircraft
. C-141 aircraft
. C-160 aircraft
. Canberra aircraft
. Cessna 172 aircraft
. Cessna 205 aircraft
. Cessna 210 aircraft
. Cessna 402B aircraft
. Cessna L-19 aircraft
. CL-41 aircraft
. CL-44 aircraft
. Comet 4 aircraft
. CV-340 aircraft
. CV-440 aircraft
. CV-880 aircraft
. CV-990 aircraft
. D-558 aircraft
. DC 3 aircraft
. DC 7 aircraft
. DC 8 aircraft
. DH 112 aircraft
. DH 115 aircraft
. DH 121 aircraft
. DH 125 aircraft
. DHC 2 aircraft
. DHC 4 aircraft
. DHC 5 aircraft
. DO-27 aircraft
. DO-28 aircraft
. DO-31 aircraft
. Electra aircraft
. F-2 aircraft
. F-4 aircraft
. F-5 aircraft
. F-8 aircraft
. F-9 aircraft
. F-17 aircraft
. F-27 aircraft
. F-28 transport aircraft
. F-84 aircraft
. F-86 aircraft
. F-89 aircraft
. F-94 aircraft
. F-100 aircraft
. F-102 aircraft
. F-104 aircraft
. F-105 aircraft
. F-106 aircraft
. FD 2 aircraft
. G-1 aircraft
. G-91 aircraft
. G-95/4 aircraft
. G-222 aircraft
. GA-5 aircraft
. H-126 aircraft
. HFB-320 aircraft
. HP-115 aircraft
. HS-748 aircraft
. IL-14 aircraft
. IL-62 aircraft
. jet provost aircraft
. Jindivik target aircraft
. L-29 jet trainer
. Lockheed model 18 aircraft
. MH-262 aircraft
. Mirage aircraft
. . Mirage 3 aircraft
. Mystere 20 aircraft
. Nord 1500 aircraft
. OV-1 aircraft
. OV-10 aircraft
. P-3 aircraft
. P-51 aircraft
. P-166 aircraft
. P-308 aircraft
. P-1127 aircraft
. P-1154 aircraft
. PD-808 aircraft
. S-2 aircraft
. S-3 aircraft
. Saab 105 aircraft
. SC-1 aircraft
. SC-5 aircraft
. SC-7 aircraft
. Scimitar aircraft
. SE-210 aircraft
. Shackleton bomber
. T-2 aircraft
. T-28 aircraft
. T-33 aircraft
. T-37 aircraft
. T-38 aircraft
. T-39 aircraft
. TS-11 aircraft
. TSR-2 aircraft
. TU-104 aircraft
. TU-124 aircraft
. TU-134 aircraft
. U-2 aircraft
. U-10 aircraft
. Valiant aircraft
. VC-10 aircraft
. Victor MK-1 aircraft
. Viscount aircraft
. VJ-101 aircraft
. X-1 aircraft
. X-2 aircraft
. X-3 aircraft
. X-5 aircraft
. X-13 aircraft
. X-14 aircraft
. X-21 aircraft
. X-21A aircraft
. X-31 aircraft
. XC-142 aircraft
. XV-4 aircraft
. XV-5 aircraft
. YS-11 aircraft
. Z-37 aircraft
RT aerodynamic configurations
∞ aircraft
airfoils
biplanes
cargo aircraft
gliders
∞ low wing aircraft
seaplanes
tailless aircraft
water takeoff and landing aircraft
wing planforms
wing profiles
∞ winged vehicles

monopole antennas
UF *spike antennas*
GS antennas
. omnidirectional antennas
. . **monopole antennas**
. . . whip antennas
RT antenna design
dipole antennas
loop antennas
monopoles
∞ spikes

monopoles
GS **monopoles**
. magnetic monopoles
RT ∞ dipoles
monopole antennas
multipoles
∞ poles

monopropellants
GS fuels
. **monopropellants**
. . aerozine
propellants
. rocket propellants
. . liquid rocket propellants
. . . **monopropellants**
. . . . aerozine
RT aircraft fuels
chemical fuels
gaseous rocket propellants
gelled rocket propellants
metal propellants
plastic propellants
propellant decomposition
slurry propellants
solid rocket propellants

monopulse antennas
GS antennas
. **monopulse antennas**
RT directional antennas
phased arrays
waveguide antennas

monopulse radar
GS radar
. Doppler radar
. . pulse Doppler radar
. . . **monopulse radar**
. pulse radar
. . pulse Doppler radar
. . . **monopulse radar**
RT Doppler radar
duplexers
radar tracking
tracking radar

monosaccharides
GS organic compounds
. carbohydrates
. . sugars
. . . **monosaccharides**
. . . . hexoses
. . . . . galactose
. . . . . glucose
. . . . pentose
. . . . . ribose
. . . . . xylose

monoscopes
GS electron tubes
. vacuum tubes
. . cathode ray tubes
. . . **monoscopes**
television equipment

. **monoscopes**
RT **camera tubes**
electron beams
image tubes
secondary emission
∞ **test equipment**

monostable multivibrators
GS **circuits**
. multivibrators
. . **monostable multivibrators**

monotectic alloys
DEF Metallic composite materials having a dispersed phase of solidification products distributed within a matrix. The dispersed components can be selected to provide characteristics such as superconductivity or lubricity.
GS **alloys**
. **monotectic alloys**
RT composite materials
∞ matrices
metal matrix composites
metals

monotone functions
GS functions (mathematics)
. **monotone functions**
RT analysis (mathematics)
calculus
real variables

monotony
RT boredom
lethargy
sensory deprivation

monsoons
GS wind (meteorology)
. **monsoons**
RT annual variations
atmospheric circulation
ground wind
precipitation (meteorology)
sea breeze

Montana
GS nations
. United States
. . **Montana**
RT Bighorn Mountains (MT–WY)
Missouri River (US)
Williston Basin (North America)
Yellowstone National Park (ID–MT–WY)

Monte Carlo method
GS analysis (mathematics)
. numerical analysis
. . **Monte Carlo method**
RT diffusion theory
expectancy hypothesis
game theory
Markov chains
mathematical models
∞ methodology
probability theory
random processes
random walk
renormalization group methods
simulation
statistical analysis
stochastic processes
transport theory

Monterey Bay (CA)
GS bays (topographic features)
. **Monterey Bay (CA)**
RT California
Pacific Ocean

month
DEF The period of the revolution of the Moon around the Earth. The month is designated as sidereal, tropical, anomalistic, dracontic, or synodical, according to whether the revolution is relative to the stars, the vernal equinox, the perigee, the ascending node, of the sun. The calendar month, which is a rough approximation of the synodical month. Used for lunation.
UF *lunation*
RT calendars
time
units of measurement

monticellite
GS calcium compounds
. **monticellite**
magnesium compounds
. **monticellite**
minerals
. **monticellite**
silicon compounds
. **silicates**
. . **monticellite**
RT olivine

montmorillonite
GS aluminum compounds
. aluminum silicates
. . **montmorillonite**
clays
. **montmorillonite**
minerals
. **montmorillonite**
silicon compounds
. **silicates**
. . aluminum silicates
. . . **montmorillonite**
RT bentonite

moods
RT emotional factors
emotions
psychological effects
psychological factors
sensory feedback

moon
DEF The natural satellite of the Earth.
GS celestial bodies
. natural satellites
. . **moon**
RT Earth–Moon system
light sources
lunar atmosphere
lunar bases
lunar communication
lunar composition
lunar craters
lunar crust
lunar dust
lunar eclipses
lunar environment
lunar evolution
lunar expioration
lunar far side
lunar geology
lunar gravitation
lunar landing sites
lunar limb
lunar luminescence
lunar magnetic fields
lunar maps
lunar occultation
lunar orbits
lunar phases
lunar photography
lunar rays
lunar shadow
lunar soil
lunar temperature
lunar topography
selenography
selenology
terraforming

moon illusion
GS psychological effects
. illusions
. . **moon illusion**
RT optical illusion
sensory feedback

moon–Earth trajectories
GS trajectories
. spacecraft trajectories
. . lunar trajectories
. . . **moon–Earth trajectories**
RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
circumlunar trajectories
Earth–Moon trajectories
Goddard Trajectory Determination System
lunar flight
mass drivers
orbital mechanics
reentry trajectories
round trip trajectories
transfer orbits

moonlets
(added July 1989)
GS celestial bodies
. **moonlets**
RT Jupiter rings
natural satellites
planetary rings
Saturn rings
Uranus rings

moonquakes
GS seismology
. **moonquakes**
RT lunar geology
lunar tides
planetary quakes
selenology

moons
USE **natural satellites**

mooring
UF *moorings*
RT airports
anchors (fasteners)
fasteners
∞ joining
materials handling
multiple docking adapters
spacecraft docking

moorings
USE **mooring**

MOPS (propulsion systems)
USE **man operated propulsion systems**

moraines
USE **glacial drift**

morale
RT creativity
disciplining
leadership
motivation
productivity
psychology
recreation

Morehouse comet
GS celestial bodies
. comets
. . **Morehouse comet**
RT solar system

MORL
USE **manned orbital laboratories**

morning
RT daytime
sunrise

Morocco
GS nations
. **Morocco**
RT Africa

morphine
GS bases (chemical)
. alkaloids
. . **morphine**
drugs
. narcotics
. . **morphine**
nitrogen compounds
. alkaloids
. . **morphine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . alkaloids
. . . . **morphine**

morphological indexes
GS ratios
. indexes (ratios)
. . **morphological indexes**
RT morphology

morphology
GS **morphology**
. geomorphology
. isomorphism
. lung morphology
. polymorphism
RT anatomy
∞ biology
differentiation (biology)
geology
histology
∞ mathematics
morphological indexes
shapes
vestibules

morphotropism
USE **isomorphism**

Morse code
RT∞ codes
communicating
keying
radio telegraphy
telecommunication

Morse potential
RT diatomic molecules
kinetic theory
potential energy

mortality
RT aging (biology)
death
expiration
life span
Mills ratio

mortars (material)
RT admixtures
bricks
cements
ceramics
concretes
grout
masonry
plasters
refractories

MOS (Japanese spacecraft)
USE **Japanese spacecraft**

MOS (semiconductors)
USE **metal oxide semiconductors**

mosaics
RT **assemblies**
diffraction
focal plane devices
photographs

Moscow
GS cities
. **Moscow**
RT Russian Federation
U.S.S.R.

MOSFET
USE **field effect transistors**

MOSS (space stations)
USE **space stations**

Mossbauer effect
RT crystal lattices
∞ **effects**
electromagnetic absorption
fluorescence
gamma rays
laser induced fluorescence
resonance scattering
resonant frequencies

mosses
USE **Bryophytes**

MOT (orbital telescopes)
USE **manned orbital telescopes**

moths
GS **animals**
. invertebrates
. . arthropods
. . . insects
. . . . **moths**
. . . . . silkworms
RT **bollworms**
infestation

motility
USE **locomotion**

∞ **motion**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The act, process or instance of change of position. Also called movement, especially when used in connection with problems involving the motion of one craft relative to another. Used for movement.
UF *movement*
RT **acceleration (physics)**
attitude (inclination)
Brownian movements
coning motion
displacement
domain wall
gliding
gyration
harmonic motion
head movement
heaving
high acceleration
immobilization
inertia
ion motion
ionic mobility
kinematics
libration
librational motion
momentum
nutation
orbits
oscillations
oscillators
particle motion
particle trajectories
pitch (inclination)
rotation
Saccadic eye movements
solar orbits
spacecraft motion
spacecraft trajectories
stellar motions
swarming
teetering
transit time
translational motion
tumbling motion
turbulence
velocity
vertical motion
vertical motion simulators
vibration
viscosity
yaw

motion aftereffects
RT equations of motion
kinetics
momentum

motion equations
USE **equations of motion**

motion perception
GS perception
. **motion perception**
RT binocular vision
monocular vision
visual perception

motion pictures
UF *cinefluorography*
cineradiography
GS photographs
. **motion pictures**
RT **animation**
chronophotography

cinematography
computer animation
graphic arts
projectors
supplements
video equipment
video tapes

motion sickness
DEF The syndrome of pallor, sweating, nausea, and vomiting which is induced by unusual acceleration. Used for air sickness.
UF *air sickness*
GS sicknesses
. motion sickness
RT acceleration stresses (physiology)
aerospace medicine
head movement
nausea
space adaptation syndrome
vomiting

motion sickness drugs
GS drugs
. motion sickness drugs
RT pharmacology

motion simulation
DEF Replication of exact motion or replication of part of a motion to provide the sensation of the motion.
GS simulation
. motion simulation
RT flight simulation
flight simulators
motion simulators
virtual reality

motion simulators
GS simulators
. motion simulators
RT computerized simulation
control simulation
flight simulators
motion simulation
space environment simulation
test facilities

motion stability
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . aerodynamic stability
. . . aircraft stability
. . . . hovering stability
. . . attitude stability
. . . . directional stability
. . . . . gyroscopic stability
. . . . lateral stability
. . . . longitudinal stability
. . . flow stability
. . . . boundary layer stability
. . . . flame stability
. . . . magnetohydrodynamic stability
. . . . . Weibel instability
. . . low speed stability
. . . rotary stability
. . . . gyroscopic stability
. . . spacecraft stability
stability
. dynamic stability
. . motion stability
. . . aerodynamic stability
. . . aircraft stability
. . . . hovering stability
. . . attitude stability
. . . . directional stability
. . . . . gyroscopic stability
. . . . lateral stability
. . . . longitudinal stability
. . . flow stability
. . . . boundary layer stability
. . . . flame stability
. . . . magnetohydrodynamic stability
. . . . . Weibel instability
. . . low speed stability
. . . rotary stability
. . . . gyroscopic stability
. . . spacecraft stability
RT combustion stability
coning motion
control stability
dynamic tests
roughness
sea keeping
spacecraft motion
stable oscillations
surface stability

motivation
GS motivation
. contract incentives
RT ∞ drives
incentives
learning
morale
reinforcement (psychology)
self stimulation
∞ stimuli

motor systems (biology)
USE efferent nervous systems

motor vehicles
DEF Automotive vehicles that do not run on rails, generally having rubber tires.
GS surface vehicles
. motor vehicles
. . automated mixed traffic vehicles
. . automobiles
. . . electric automobiles
. . electric motor vehicles
. . . electric automobiles
. . tractors
. . . crawler tractors
. . . tracked vehicles
. . trucks
. . . tank trucks
RT transportation
∞ vehicles

motors
SN (LIMITED TO MACHINES SUPPLIED WITH EXTERNAL ENERGY WHICH IS CONVERTED INTO FORCE AND/OR MOTION—SEE ENGINES FOR MACHINES WITH SELF-CONTAINED POWER SOURCES)
DEF Machines supplied with external energy which is converted into force and/or motion.
GS motors
. electric motors
. . asynchronous motors
. . induction motors
. . micromotors
. . stepping motors
. . synchronous motors
. . torque motors
. servomotors
RT apogee boost motors
∞ electric equipment
energy conversion efficiency
engines
∞ generators
hydraulic equipment
stators

MOTS (tracking system)
USE minitrack system

mountain inhabitants
GS communities
. inhabitants
. . mountain inhabitants
RT altitude acclimatization
high altitude environments
low temperature environments

mountains
GS landforms
. mountains
. . Adirondack Mountains (NY)
. . Alps Mountains (Europe)
. . Andes Mountains (South America)
. . Appalachian Mountains (North America)
. . Bighorn Mountains (MT–WY)
. . Black Hills (SD–WY)
. . Carpathian Mountains (Europe)
. . Cascade Range (CA–OR–WA)
. . Caucasus Mountains (U.S.S.R.)
. . coastal ranges (CA)
. . Great Smoky Mountains (NC–TN)
. . Himalayas
. . Peninsular Ranges (CA)
. . Pyrenees Mountains (Europe)
. . Rocky Mountains (North America)
. . San Juan Mountains (CO)
. . Sierra Nevada Mountains (CA)
. . Wind River Range (WY)
. . Wrangell Mountains (AK)
RT Central Piedmont (US)
cirques (landforms)
cones (volcanoes)
continents
divides (landforms)
formations
gaps (geology)
geomorphology
highlands
Mars volcanoes
massifs
mesas
orography
∞ peaks
peaks (landforms)
piedmonts
Pike's Peak (CO)
∞ ridges
terraces (landforms)
volcanoes
volcanology
watersheds

mounting
GS mounting
. rigid mounting
RT assembling
∞ attachment
brackets
∞ joining
suspending (hanging)

mounts
USE supports

mouth
GS anatomy
. digestive system
. . mouth
. . . lips (anatomy)
. face (anatomy)
. . mouth
. . . lips (anatomy)
RT salivary glands

teeth
tongue

movement
USE **motion**

moving target indicators
DEF Radar devices that employ a technique that enhances the detection and display of moving radar targets by supressing fixed targets. Doppler processing is one method of implementation. Used for MTI indicators.
UF *MTI radar*
GS radar
. **moving target indicators**
RT cancellation circuits
coherent radar
Doppler radar
over-the-horizon radar
radar cross sections
radar tracking
target acquisition

Mozambique
GS nations
. **Mozambique**
RT Africa

MPP (computers)
USE **massively parallel processors**

MR-3 flight
USE **Mercury MR-3 flight**

MRAC (systems)
USE **model reference adaptive control**

MRCA aircraft
UF *multi-role combat aircraft*
Tornado aircraft
RT ∞ aircraft
attack aircraft
fighter aircraft
∞ military aircraft

Mrkos comet
GS celestial bodies
. comets
. . **Mrkos comet**
RT solar system

MSAT
DEF A joint Canada/United States mobile satellite system which is being developed with a voice and data communication link between mobile units and the switched telephone network or between mobile units and other mobile units via satellite. Each country will have a satellite capable of mutual backup. Launch date is planned for 1994.
GS artificial satellites
. communication satellites
. . **MSAT**
RT ground stations
land mobile satellite service
maritime satellites
mobile communication systems
radio communication
radio relay systems
satellite transmission

MSBLS
USE **microwave scanning beam landing system**

MSM (semiconductors)
DEF Semiconductor devices consisting of a semiconductor layer sandwiched between two layers of metal. Used for metal-semiconductor-metal semiconductors.
UF *metal-semiconductor-metal semiconductors*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **MSM (semiconductors)**
RT MIM diodes
photodiodes
Schottky diodes
semiconductor junctions
SIS (semiconductors)

MSRE reactors
USE **molten salt nuclear reactors**

MTBF
DEF The mean of the distribution of time (or cycles, miles, events) between successive failure. MTBF is often estimated by dividing the total operating time for like items by the total number of failures encountered. Used for mean time bwtween failures.
UF *mean time between failures*
GS time
. **MTBF**
RT downtime
failure analysis
failure modes
life (durability)
rates (per time)
reliability
statistical analysis

MTF
USE **modulation transfer function**

MTFF (space station)
USE **man tended free flyers**

MTI radar
USE **moving target indicators**

MTPE
USE **Mission to Planet Earth**

MUBIS (scanners)
USE **multiple beam interval scanners**

mucoceles
GS cysts
. **mucoceles**
RT ∞ blisters

mucus
GS body fluids
. **mucus**
RT saliva

mud
GS sediments
. **mud**
soils
. **mud**
RT alluvium
clays
fens (landforms)
grout
ocean bottom
rain erosion
sludge
tidal flats

mufflers
RT acoustic retrofitting
aircraft noise
attenuators
baffles
damping
∞ diffusers
exhaust systems
furnaces
jet aircraft noise
noise (sound)
noise reduction
propeller noise
rocket engine noise
silencers
suppressors

mulberry (alloy)
GS alloys
. **mulberry (alloy)**
RT antimony alloys
molybdenum alloys

mullites
RT aluminum silicates
minerals

multi-anode microchannel arrays
DEF A family of photoelectric, photon counting array detectors being developed for use in instruments on both ground based and spaceborne telescopes.
GS arrays
. **multi-anode microchannel arrays**
RT anodes
microchannels
radiation detectors
spaceborne telescopes
telescopes
x ray detectors

multi-role combat aircraft
USE **MRCA aircraft**

multibeam antennas
DEF Antennas that have the ability to form more than one beam from a single radiating aperture.
GS antennas
. **multibeam antennas**
RT beams (radiation)
lens antennas
microwave antennas
reflector antennas
satellite antennas
satellite communication

multiblock grids
(added May 1995)
UF *multiple blocked grids*
GS coordinates
. computational grids
. . structured grids (mathematics)
. . . **multiblock grids**
RT computational fluid dynamics

multichannel communication
GS telecommunication
. **multichannel communication**
RT code division multiple access
interference factor table
multiple access
radio transmitters
teleconferencing
time division multiple access

multichannel plates
USE **microchannel plates**

multicharged ions
USE **ions**

multidisciplinary design optimization
(added January 1995)
GS optimization
. **multidisciplinary design optimization**
RT aircraft design
architecture (computers)
computer aided design
design analysis
genetic algorithms
systems engineering

multidisciplinary research
(added January 1995)
DEF Research by combining several (academic) disciplines or methods.
GS research
. **multidisciplinary research**
RT concurrent engineering
management methods
operations research
project management
research management

multiengine vehicles
RT ∞ aircraft
B-1 aircraft
launch vehicles
light transport aircraft
missile configurations
missiles
multistage rocket vehicles
recoverable launch vehicles
rocket vehicles
∞ vehicles

multigrid methods
(added September 1989)
DEF A numerical technique which attempts to accelerate the convergence of an iterative process by computing corrections to the solution on coarser meshes and propagating these changes to the fine mesh through interpolation.
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **multigrid methods**
RT computational fluid dynamics
computational grids
finite difference theory
finite element method
grid generation (mathematics)
iteration
iterative solution
∞ methodology
unstructured grids (mathematics)

multilayer insulation
GS insulation
. **multilayer insulation**
interlayers
. **multilayer insulation**
RT composite materials
cryogenic fluid storage
fabrics
∞ foils
foils (materials)
laminates
∞ layers
metal foils
ply orientation
sandwich structures
∞ sheets

multilayer structures
USE **laminates**

multiloop systems
USE **cascade control**

multimedia
(added March 1993)
UF *hypermedia*
interactive multimedia
intermedia
RT audio visual equipment
audio visual material
computer graphics
electronic publishing
graphic arts
imaging techniques
information systems
teleconferencing
training devices
video communication
video data
video tape recorders
video tapes
visual aids
voice communication

multimission modular spacecraft
DEF Future spacecraft to be operated in conjunction with the Space Shuttle orbiter vehicle and serviced by its module exchange mechanism. Used for MMS.
UF *MMS*
RT BESS (satellite)
Landsat follow-on missions
satellite networks
Solar Maximum Mission

multimode resonators
GS resonators
. **multimode resonators**
RT cavity resonators
magnetrons
propagation modes

multipactor discharges
GS electric current
. electric discharges
. . **multipactor discharges**
RT linear accelerators
photomultiplier tubes
secondary emission
spark gaps

multipath transmission
DEF The process, or condition, in which radiation travels between source and receiver via more than one path. Since there can be only one direct path, some process of reflection, refraction or scattering must be involved.
GS transmission
. electromagnetic wave transmission
. . radio transmission
. . . **multipath transmission**
. signal transmission
. . radio transmission
. . . **multipath transmission**
RT cepstral analysis
diffraction paths
Fermat principle
multistatic radar
optical paths
∞ paths
radio waves
sound transmission
wave propagation

multiphase flow
UF *mixed flow*
GS fluid flow
. **multiphase flow**
. . two phase flow
RT conical flow
critical flow
Crocco–Lee theory
flow distortion
flow measurement
gas flow
laminar flow
liquid flow
mass flow
orifice flow
pipe flow
pressure gradients
single-phase flow
solids flow
steady flow
steam flow
subcritical flow
supercritical flow
turbulent flow
uniform flow
unsteady flow

multiphoton absorption
DEF Ionization and dissociation of a molecule under the action of powerful laser radiation. Laser-flux dependent light intensities emitted by different excited states of the molecule indicate the various absorption processes.
GS energy absorption
. radiation absorption
. . electromagnetic absorption
. . . **multiphoton absorption**
RT ∞ absorption
photon absorptiometry

multiple access
DEF The allocation of communication system resources (output) among multiple users by means of power, bandwidth, and power assignment singly or in combination.
GS telecommunication
. **multiple access**
. . Aloha system
. . code division multiple access
. . demand assignment multiple access
. . frequency division multiple access
. . time division multiple access
transmission
. signal transmission
. . data transmission
. . . **multiple access**
. . . . Aloha system
. . . . code division multiple access
. . . . demand assignment multiple access
. . . . frequency division multiple access
. . . . time division multiple access
RT access control
frequency division multiplexing
multichannel communication
packet switching
pulse communication
wideband communication

multiple beam interval scanners
UF *MUBIS (scanners)*
GS antennas
. **multiple beam interval scanners**
RT linear arrays
radar scanning

multiple blocked grids
USE **multiblock grids**

multiple docking adapters
UF *MDA*
GS adapters
. **multiple docking adapters**
RT airlock modules
mooring
orbital rendezvous
Saturn 1 workshop
Saturn 5 workshop
Saturn workshops
Skylab 1
Skylab 2
Skylab 3
Skylab 4
spacecraft docking

multiple frequency radar
USE **multispectral radar**

multiple input multiple output
USE **MIMO (control systems)**

multiple instruction multiple data stream
USE **MIMD (computers)**

multiple output programs
GS computer programs
. **multiple output programs**
RT multiprogramming
readout
time sharing

multiple target tracking
(added August 1991)
DEF The process of following movements of several targets simultaneously.
GS tracking (position)
. **multiple target tracking**
RT optical tracking
radar targets
radar tracking
target acquisition
target recognition
targets
tracking filters
tracking problem

multiple target trajectory systems
USE **MATTS (systems)**

multiplets
USE **fine structure**

multiplex transmission
USE **multiplexing**

multiplexers
USE **multiplexing**

multiplexing
DEF The simultaneous transmission of two or more signals within a single channel. The three basic methods of multiplexing involve the separation of signals by time division, frequency division, and phase division. Used for multiplex transmission and multiplexers.
UF *multiplex transmission*
multiplexers
GS transmission
. **multiplexing**
. . code division multiplexing
. . frequency division multiplexing
. . time division multiplexing
. . wavelength division multiplexing
RT access control
carrier frequencies
code division multiple access
data transmission
demultiplexing
frequency division multiple access
pulse communication
radio transmission
satellite transmission
signal transmission

multiplication
GS number theory
. **multiplication**
RT arithmetic
computation
fringe multiplication

multiplier phototubes
USE **photomultiplier tubes**

multipliers
DEF Devices which have two or more inputs and whose output is a representation of the product of the quantities represented by the input signals.
GS **multipliers**
. channel multipliers
RT Lagrange multipliers
logic circuits
photomultiplier tubes

multipolar fields
RT continuum mechanics
field theory (physics)
gravitational fields
magnetic fields
multipoles

multipoles
RT monopoles
multipolar fields

multiprocessing (computers)
GS data processing
. **multiprocessing (computers)**
RT associative processing (computers)
computers
concurrent processing
Connection Machine
data processing equipment
distributed memory
hypercube multiprocessors
interprocessor communication
multiprogramming
parallel programming
pipelining (computers)
real time operation
supercomputers
time sharing
vector processing (computers)

multiprogramming
UF *multitasking (computers)*
GS computer programming
. **multiprogramming**
RT machine-independent programs
multiple output programs
multiprocessing (computers)
pipelining (computers)
∞ programming
time sharing

multipropellants
USE **rocket propellants**

multiradar tracking
USE **radar networks**

multisensor applications
GS **multisensor applications**
. multisensor fusion
RT enhanced vision
image processing
imaging techniques
pattern recognition
remote sensing
remote sensors

multisensor fusion
(added October 1994)
DEF A combination of data or images from more than one sensor source (or from multispectral sensors) for display as a single image.
UF *data fusion*
sensor fusion
GS multisensor applications
. **multisensor fusion**
RT data integration
fuzzy systems
imaging techniques
remote sensing
robotics
signal processing
terrain analysis

multispectral band cameras
GS optical equipment
. cameras
. . **multispectral band cameras**
photographic equipment
. cameras
. . **multispectral band cameras**
RT infrared photography
photography

multispectral band scanners
GS optical equipment
. optical scanners
. . **multispectral band scanners**
. . . thematic mappers (LANDSAT)
scanners
. optical scanners
. . **multispectral band scanners**
. . . thematic mappers (LANDSAT)
RT band ratioing
change detection
Coastal Zone Color Scanner
Earth observations (from space)
imaging techniques
infrared scanners
ocean color scanner
panoramic scanning
photography
radiometric correction
radiometric resolution
scanning
spaceborne photography
spectral reconnaissance
vegetative index

multispectral linear arrays
DEF Large number of interconnected solid state detectors in a pushbroom mode wherein the forward motion of the vehicle (spacecraft) sweeps the assembly of detectors which are oriented perpendicular to the ground track. Used for MLA.
UF *MLA*
GS arrays
. antenna arrays
. . linear arrays
. . . **multispectral linear arrays**
electronic equipment
. solid state devices
. . **multispectral linear arrays**
spacecraft instruments
. satellite instruments
. . **multispectral linear arrays**
RT ∞ detectors
∞ sensors

multispectral photography
GS imagery
. photography
. . **multispectral photography**
. . . infrared photography
. . . . color infrared photography
. . . radar photography
RT change detection
crop identification
Earth observations (from space)
I2S cameras
image resolution
imaging techniques
spectral reconnaissance

multispectral radar
UF *dual frequency radar*
multiple frequency radar
GS radar
. **multispectral radar**
RT imagery
imaging techniques
spectral reconnaissance

Multispectral Resource Sampler
DEF An experimental remote sensing instrument for satellites to measure both intensity and polarization at several wavelengths. The first one was launched in the late 1980s.
GS artificial satellites
. **Multispectral Resource Sampler**
RT remote sensing

multispectral tracking telescopes
GS telescopes
. spectroscopic telescopes
. . **multispectral tracking telescopes**
RT optical measuring instruments
optical tracking
tracking (position)

multistage compressors
USE **turbocompressors**

multistage rocket vehicles
DEF Vehicles having two or more rocket units, each unit firing after the one in back of it has exhausted its propellant. Normally, each unit, or stage, is jettisoned after completing its firing.
GS rocket vehicles
. **multistage rocket vehicles**
. . Ablestar launch vehicle
. . Antares rocket vehicle
. . Argo rocket vehicles
. . Astrobee rocket vehicles
. . . Astrobee 1500 rocket vehicle
. . Athena rocket vehicle
. . Atlas launch vehicles
. . . Atlas Able 5 launch vehicle
. . . Atlas Agena B launch vehicle
. . . Atlas Agena launch vehicles
. . . Atlas Centaur launch vehicle
. . . Atlas SLV-3 launch vehicle
. . Bernice rocket vehicle
. . Black Knight rocket vehicle
. . Blue Scout rocket vehicle
. . Diamant launch vehicle
. . Eldo launch vehicle
. . EXOS sounding rocket
. . Jaguar rocket vehicle
. . Javelin rocket vehicle
. . Juno launch vehicles
. . . Juno 1 launch vehicle
. . . Juno 2 launch vehicle
. . Jupiter C rocket vehicle
. . Kappa rocket vehicles
. . . Kappa 8 rocket vehicle
. . . Kappa 9 rocket vehicle
. . Lambda rocket vehicles
. . Little Joe 2 launch vehicle
. . Nike rocket vehicles
. . . Nike-Apache rocket vehicle
. . . Nike-Cajun rocket vehicle
. . . Nike-Hydac rocket vehicle
. . . Nike-Iroquois rocket vehicle
. . . Nike-Javelin rocket vehicle
. . . Nike-Tomahawk rocket vehicle
. . Nova launch vehicles
. . Pegasus air-launched booster
. . Phoenix sounding rocket
. . RAM B launch vehicle
. . Rubis rocket vehicle
. . Saturn launch vehicles
. . . Saturn 1 launch vehicles
. . . . Saturn 1 SA-1 launch vehicle
. . . . Saturn 1 SA-10 launch vehicle
. . . . Saturn 1 SA-2 launch vehicle
. . . . Saturn 1 SA-3 launch vehicle
. . . . Saturn 1 SA-4 launch vehicle
. . . . Saturn 1 SA-5 launch vehicle
. . . . Saturn 1 SA-6 launch vehicle
. . . . Saturn 1 SA-7 launch vehicle
. . . . Saturn 1 SA-8 launch vehicle
. . . . Saturn 1 SA-9 launch vehicle
. . . Saturn 1B launch vehicles
. . . Saturn 2 launch vehicles
. . . Saturn 5 launch vehicles
. . . Saturn D launch vehicle
. . Scout launch vehicle
. . Skylark rocket vehicle
. . Thor launch vehicles
. . . Thor Able rocket vehicle
. . . Thor Agena launch vehicle
. . . Thor Delta launch vehicle
. . Titan launch vehicles
. . . Titan 3 launch vehicle
. . . Titan 4 launch vehicle
. . Vanguard 2 launch vehicle
. . Vega launch vehicle
. . WASP sounding rocket
RT air launching
expendable stages (spacecraft)
interim stages (spacecraft)
launch vehicles
Minuteman ICBM
multiengine vehicles
Navaho missile
payload mass ratio
Pershing missile
piggyback systems
polaris missiles
propulsive efficiency
rocket engines
SS-11 missile
stage separation
Sunblazer space probe
Talos missile
terrier missile
Titan ICBM
Trailblazer 1 reentry vehicle
Trailblazer 2 reentry vehicle
upper stage rocket engines
∞ vehicles

multistatic radar
DEF System in which successive lobes of the antenna are sequentially engaged to provide a tracking capability without physical movement of the antenna. Used for bistatic radar.
UF *bistatic radar*
GS radar
. Doppler radar
. . **multistatic radar**
. surveillance radar
. . **multistatic radar**
RT multipath transmission
pulse radar
radar detection
target recognition

multitasking (computers)
USE **multiprogramming**

multitemporal analysis
USE **temporal resolution**

multivariable control
(added July 1991)
RT ∞ control
control theory
feedback control
optimal control

multivariate statistical analysis
GS statistical analysis
. variance (statistics)
. . **multivariate statistical analysis**
. . . bivariate analysis
. . . covariance
. . . orthogonality
. . . regression analysis
. . . . regression coefficients
RT ∞ analyzing
correlation
discriminant analysis (statistics)
∞ variance

multivibrators
DEF Two-stage regenerative circuits with two possible states and an abrupt transition characteristic.
GS circuits
. **multivibrators**
. . flip-flops
. . monostable multivibrators
RT amplifiers
bistable circuits
logic circuits
oscillators
positive feedback
switching circuits
trigger circuits

muon spin rotation
DEF Particle spin depolarization caused by sensitivity of muon spin to the presence of defects in certain metals.
GS gyration
. rotation
. . **muon spin rotation**
RT charged particles
hyperfine structure
muons
particle diffusion
particle spin
precession

muonium
RT electrons
mesons

muons
GS particles
. elementary particles
. . bosons
. . . mesons
. . . . muons
. . fermions
. . . leptons
. . . . muons
. . hadrons
. . . mesons
. . . . muons

. nuclear particles
. . bosons
. . . mesons
. . . . muons
RT baryons
charged particles
electron decay rate
muon spin rotation

Murchison meteorite
GS celestial bodies
. meteorites
. . stony meteorites
. . . carbonaceous meteorites
. . . . carbonaceous chondrites
. . . . . Murchison meteorite
. . chondrites
. . . carbonaceous chondrites
. . . . . Murchison meteorite

Murray meteorite
GS celestial bodies
. meteorites
. . stony meteorites
. . . carbonaceous meteorites
. . . . carbonaceous chondrites
. . . . . Murray meteorite
. . chondrites
. . . carbonaceous chondrites
. . . . . Murray meteorite

muscle relaxants
GS drugs
. muscle relaxants

muscles
GS anatomy
. musculoskeletal system
. . muscles
. . . constrictors
. . . diaphragm (anatomy)
. . . flexors
. . . myocardium
. . . tendons
RT aldolase
ataxia
congeners
convulsions
electrocardiography
fibrillation
heart
hypodynamia
muscular fatigue
muscular strength
muscular tonus
myoelectric potentials
myoelectricity
myoglobin
spasms
twitching

muscovite
DEF An important mineral of the mica group.
GS aluminum compounds
. muscovite
chalcogenides
. oxides
. . silicon oxides
. . . muscovite
minerals
. mica
. . muscovite
silicon compounds
. silicon oxides
. . muscovite

muscular fatigue
GS fatigue (biology)
. muscular fatigue
RT muscles
musculoskeletal system
stress (physiology)

muscular function
GS muscular function
. spasms
RT cramps
∞ functions
hypodynamia
hypokinesia
hypotonia
mechanograms
twitching

muscular strength
RT muscles
musculoskeletal system
∞ strength

muscular tonus
UF *tonus*
GS muscular tonus
. hypotonia
RT exercise physiology
muscles

musculoskeletal system
UF *skeleton*
GS anatomy
. musculoskeletal system
. . bones
. . . femur
. . . pelvis
. . . scapula
. . . skull
. . . . cranium
. . . . . intracranial cavity
. . . . mastoids
. . . spine
. . . . vertebrae
. . . sternum
. . . tibia
. . . ulna
. . connective tissue
. . . bone marrow
. . . cartilage
. . . collagens
. . joints (anatomy)
. . . elbow (anatomy)
. . . knee (anatomy)
. . . wrist
. . muscles
. . . constrictors
. . . diaphragm (anatomy)
. . . flexors
. . . myocardium
. . . tendons
RT exoskeletons
hypokinesia
intervertebral disks
muscular fatigue
muscular strength
sciatic region
striation
∞ systems

museums
RT anthropology
artifacts
buildings
collection
histories
libraries

mushy zones
DEF Regions of liquid plus solid phases in alloys that solidify over a range of temperatures. Used for liquid plus solid zones.
UF *liquid plus solid zones*
RT casting
cooling
metallography
phase transformations
solidification

music
RT arts
octaves

muskegs
GS landforms
. muskegs
RT Arctic regions
marshlands
soils
topography
water

Mustang aircraft
USE P-51 aircraft

mutagens
DEF Agents that raise the frequency of mutations above the spontaneous rate.
RT air pollution
biochemistry
biological evolution
cells (biology)
chemical analysis
genetics
mutations

mutations
RT biological diversity
biological evolution
cells (biology)
chromosomes
genes
genetics
mitosis
mutagens
nucleogenesis
radiation hazards

MX missile
DEF United States strategic intercontinental ballistic missile.
UF *Peacekeeper missile*
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . MX missile
. surface to surface missiles
. . intercontinental ballistic missiles
. . . MX missile
RT missile silos

myelin
RT fats
lipids
nerves
nervous system
neurons

Mylar (trademark)
GS polymeric films
. Mylar (trademark)
RT polyethylene terephthalate
∞ polymers

myocardial infarction
GS diseases
. heart diseases

. . infarction
. . . **myocardial infarction**
RT **arteriosclerosis**
blood coagulation
coronary artery disease
hypertension
thrombosis

myocardium
GS **anatomy**
. circulatory system
. . cardiovascular system
. . . heart
. . . . **myocardium**
. musculoskeletal system
. . muscles
. . . **myocardium**
RT **angina pectoris**

myoelectric potentials
GS **myoelectricity**
. **myoelectric potentials**
RT **muscles**
∞ potential

myoelectricity
GS **myoelectricity**
. myoelectric potentials
RT **electromyography**
muscles

myoglobin
GS **biopolymers**
. proteins
. . **myoglobin**
organic compounds
. proteins
. . **myoglobin**
RT **muscles**
pigments

myopia
RT **vision**

Mystere 20 aircraft
UF *Dassault Mystere 20 aircraft*
GS **Dassault aircraft**
. **Mystere 20 aircraft**
jet aircraft
. turbofan aircraft
. . **Mystere 20 aircraft**
light aircraft
. **Mystere 20 aircraft**
monoplanes
. **Mystere 20 aircraft**
passenger aircraft
. **Mystere 20 aircraft**
transport aircraft
. **Mystere 20 aircraft**

Mystere 50 aircraft
DEF A tri-engine business jet aircraft (Dassault). Used for Dassault Mystere 50 aircraft.
UF *Dassault Mystere 50 aircraft*
GS **Dassault aircraft**
. **Mystere 50 aircraft**
jet aircraft
. **Mystere 50 aircraft**
passenger aircraft
. **Mystere 50 aircraft**
transport aircraft
. **Mystere 50 aircraft**
RT ∞ **aircraft**
turbofan engines

N

N electrons
GS particles
. charged particles
. . energetic particles
. . . electrons
. . . . **N electrons**
. corpuscular radiation
. . energetic particles
. . . electrons
. . . . **N electrons**
. elementary particles
. . fermions
. . . leptons
. . . . electrons
. . . . . **N electrons**
RT beta particles

N-156 aircraft
USE **F-5 aircraft**

N-body problem
USE **many body problem**

n-n junctions
GS semiconductor junctions
. **n-n junctions**

n-p junctions
USE **p-n junctions**

n-p-n junctions
GS semiconductor junctions
. **n-p-n junctions**
RT bipolar transistors

n-type semiconductors
GS semiconductors (materials)
. **n-type semiconductors**
RT **electrons**
Schottky diodes
semiconductor junctions
Suhl effect

NA-300 aircraft
USE **OV-10 aircraft**

nacelles
RT **aerodynamic configurations**
air intakes
airframes
cowlings
ducted bodies
engine inlets
external store separation
external stores
external tanks
fairings
housings
nose inlets
perforated shells
pods (external stores)
protuberances
shells (structural forms)
wing-fuselage stores

Naiad
(added January 1996)
DEF **A natural satellite of Neptune orbiting at a mean distance of 48,000 kilometers.**
GS **celestial bodies**
. **natural satellites**
. . **Neptune satellites**
. . . **Naiad**
RT **Neptune (planet)**

naked singularities
DEF **Singularities in spacetime that will be visible and communicable to the outside world, i.e., singularities that are not shielded by an event horizon from infinity.**
GS **analysis (mathematics)**
. **complex variables**
. . **singularity (mathematics)**
. . . **naked singularities**
RT **astrophysics**
black holes (astronomy)
cosmology
degenerate matter
event horizon
gravitational collapse
points (mathematics)
relativity
space-time functions
theoretical physics
white holes (astronomy)

nakhlites
(added August 1991)
DEF **Achondritic stony meteorites consisting of a holocrystalline aggregate of diopside (75 percent) and olivine.**
GS **celestial bodies**
. **meteorites**
. . **stony meteorites**
. . . **achondrites**
. . . . **nakhlites**
RT **chassignites**
shergottites

NAMC aircraft
USE **Nihon aircraft**

Namibia
UF *South West Africa*
RT **Africa**
nations
Republic of South Africa

naming
GS **naming**
. norms
RT **nomenclatures**
specifications
standardization

nanocrystalline materials
USE **nanocrystals**

nanocrystalline structure
USE **nanostructure (characteristics)**

nanocrystals
(added October 1997)
UF *nanocrystalline materials*
GS **crystals**
. **nanocrystals**
RT **crystal structure**
grain size
microcrystals
nanostructure (characteristics)

nanostructure (characteristics)
(added October 1997)
UF *nanocrystalline structure*
GS **microstructure**
. **nanostructure (characteristics)**
RT ∞ **characteristics**
crystal structure
grain size
nanocrystals
semiconductors (materials)

nanostructures (devices)
(added October 1997)
GS **nanostructures (devices)**
. quantum dots
. quantum wires
RT ∞ **devices**
quantum electronics
semiconductor devices

nap-of-the-earth navigation
DEF **Low altitude flight of helicopters during night or day utilizing electronic means for detection and recognition of landmarks and targets. Used for NOE navigation.**
UF *NOE navigation*
GS **navigation**
. **air navigation**
. . **nap-of-the-earth navigation**
. . . **terrain following**
RT **helicopters**
image processing
low altitude
night flights (aircraft)
night vision
target recognition
terrain analysis

naphthalene
GS **organic compounds**
. **cyclic compounds**
. . **cyclic hydrocarbons**
. . . **naphthalene**
. **hydrocarbons**
. . **cyclic hydrocarbons**
. . . **naphthalene**

naphthenes
GS **organic compounds**
. **cyclic compounds**
. . **cyclic hydrocarbons**
. . . **naphthenes**
. **hydrocarbons**
. . **cyclic hydrocarbons**
. . . **naphthenes**

nappes
USE **folds (geology)**

narcolepsy
GS **diseases**
. **narcolepsy**

narcosis
DEF **A state of profound stupor, produced by the toxic effect of certain substances; in diluent gas narcosis, by excessive partial pressure of the diluent.**
GS **unconsciousness**
. **narcosis**
RT **physiology**
∞ **poisoning**

narcotics
GS **drugs**
. **narcotics**
. . **morphine**
RT **pentobarbital**
phenobarbital
psychotropic drugs

narrowband
DEF A description of frequency measurement whose frequency band of energy is smaller relative to the rest of the band.
GS bandwidth
. narrowband
RT ∞ bands
broadband
frequencies

NASA Communication Network
USE **NASCOM network**

NASA End-to-End Data System
USE **needs (data system)**

NASA Interactive Planning System
UF *NIPS (system)*
RT computer programs
Earth resources
management methods
NASA programs
project planning
resource allocation
resources management
∞ systems

NASA programs
GS programs
. **NASA programs**
. . ACEE program
. . Assess program
. . ATLIT project
. . DAST program
. . NASA space programs
. . . Apollo applications program
. . . Apollo project
. . . Bioastronautical Orbital Space System
. . . Centaur project
. . . Earth & Ocean Physics Applications Program
. . . Earth Resources Program
. . . . Earth Resources Survey Program
. . . . SEASAT program
. . . Echo project
. . . Galileo project
. . . Gemini project
. . . Helios Project
. . . Jupiter project
. . . Magellan project (NASA)
. . . Mariner program
. . . . Mariner Venus–Mercury 1973
. . . . Mariner–Mercury 1973
. . . Mars 69 project
. . . Mars 71 project
. . . Mercury project
. . . National Launch Vehicle Program
. . . NEW MOONS project
. . . Nimbus project
. . . OPEN Project
. . . Pioneer project
. . . Project SETI
. . . Ranger project
. . . . Agena B Ranger Program
. . . Rover project
. . . SAIL project
. . . Saturn project
. . . Scout project
. . . Skylab program
. . . Starprobe mission
. . . Surveyor project
. . . Synchronous Communications Satellite Proj
. . . Tektite project
. . . TIROS project
. . . Titan project
. . . Vanguard project
. . . Viking Mars program
. . . Voyager project
. . Mission to Planet Earth
. . National Aerospace Plane Program
. . quiet engine program
. . supersonic cruise aircraft research
. . TACT program
. . Terminal Configured Vehicle Program
. . Tilt Rotor Research Aircraft Program
RT Advanced Launch System (STS)
AgRISTARS project
Apollo extension system
Canadian space program
Committee on Space Research
Communications Technology Satellite
Earth Resources Information System
GARP Atlantic Tropical Experiment
geographic applications program
Global Atmospheric Research Program
grants
Gravity Probe B
Landsat satellites
leasing
NASA Interactive Planning System
NASTRAN
NOESS
OSS–1 payload
payload deployment & retrieval system
Quasat
Questol aircraft
∞ research projects
rotor systems research aircraft
SEASAT satellites
single stage to orbit vehicles
space programs
space transportation system
Spacelab
SPHINX
Starsite program
StormSat satellite
Synchronous Earth Observatory satellite
technology utilization
Transit navigation system
university program

NASA space programs
GS programs
. NASA programs
. . **NASA space programs**
. . . Apollo applications program
. . . Apollo project
. . . Bioastronautical Orbital Space System
. . . Centaur project
. . . Earth & Ocean Physics Applications Program
. . . Earth Resources Program
. . . . Earth Resources Survey Program
. . . . SEASAT program
. . . Echo project
. . . Galileo project
. . . Gemini project
. . . Helios Project
. . . Jupiter project
. . . Magellan project (NASA)
. . . Mariner program
. . . . Mariner Venus–Mercury 1973
. . . . Mariner–Mercury 1973
. . . Mars 69 project
. . . Mars 71 project
. . . Mercury project
. . . National Launch Vehicle Program
. . . NEW MOONS project
. . . Nimbus project
. . . OPEN Project
. . . Pioneer project
. . . Project SETI
. . . Ranger project
. . . . Agena B Ranger Program
. . . Rover project
. . . SAIL project
. . . Saturn project
. . . Scout project
. . . Skylab program
. . . Starprobe mission
. . . Surveyor project
. . . Synchronous Communications Satellite Proj
. . . Tektite project
. . . TIROS project
. . . Titan project
. . . Vanguard project
. . . Viking Mars program
. . . Voyager project
RT Advanced Launch System (STS)
Cassini mission
Cluster Mission
Comet Rendezvous Asteroid Flyby Mission
International Space Year
manned Mars missions
Mars sample return missions

Space Station Freedom

NASA Structural Analysis program
USE **NASTRAN**

NASCOM network
UF *NASA Communication Network*
GS communicating
. point to point communication
. . **NASCOM network**
networks
. communication networks
. . **NASCOM network**
RT Fleet Satellite Communication System
Global Tracking Network
radio communication
telecommunication

NASTRAN
UF *NASA Structural Analysis program*
GS computer programs
. applications programs (computers)
. . **NASTRAN**
RT bending moments
computer techniques
dynamic loads
finite element method
matrix methods
NASA programs
stress analysis
structural analysis

National Aerospace Plane Program
GS programs
. NASA programs
. . **National Aerospace Plane Program**
RT aerospace planes
hypersonic vehicles
transatmospheric vehicles
X-30 vehicle

National Airspace System
RT air traffic control
aircraft safety
airports
airspace
National Airspace Utilization System
National Aviation System

National Airspace Utilization System
RT air law
air navigation
air traffic
air traffic control
aircraft approach spacing
airspace
collision avoidance
flight paths
flight plans
flight rules
National Airspace System
∞ systems

National Aviation System
RT air traffic
air traffic control
air transportation
aircraft approach spacing
flight rules
landing aids
National Airspace System
∞ systems
traffic control

National Launch Vehicle Program
GS programs
. NASA programs
. . NASA space programs
. . . **National Launch Vehicle Program**
. space programs
. . NASA space programs
. . . **National Launch Vehicle Program**
RT launch vehicles
launchers
launching
launching sites

National Oceanic Satellite System
DEF Joint NASA (Goddard)–DOD venture.
RT artificial satellites
maritime satellites
∞ systems

National Operational Environmental Sat Sys
USE **NOESS**

national parks
DEF Areas of scenic beauty or historical importance preserved and maintained by a national government for the enjoyment of the public.
GS land
. parks
. . **national parks**
. . . Yellowstone National Park (ID–MT–WY)

National Severe Storms Project
RT meteorology
tornadoes
warning systems

nations
GS **nations**
. Afghanistan
. Albania
. Algeria
. Andorra
. Angola
. Antigua and Barbuda
. Argentina
. Armenia
. Australia
. Austria
. Azerbaijan
. Bahamas
. Bahrain
. Bangladesh
. Barbados
. Belarus
. Belgium
. Belize
. Benin
. Bhutan
. Bolivia
. Bosnia and Herzegovina
. Botswana
. Brazil
. Brunei
. Bulgaria
. Burkina
. Burma
. Burundi
. Cambodia
. Cameroon
. Canada
. . Alberta
. . British Columbia
. . Manitoba
. . New Brunswick
. . Newfoundland
. . Northwest Territories
. . Nova Scotia
. . Ontario
. . Prince Edward Island
. . Quebec
. . Saskatchewan
. . Yukon Territory
. Cape Verde
. Central African Republic
. Chad
. Chile
. China
. Colombia
. Congo (Brazzaville)
. Costa Rica
. Cote d'Ivoire
. Croatia
. Cuba
. Cyprus
. Czech Republic
. Czechoslovakia
. Democratic Republic of Congo
. Denmark
. Djibouti
. Dominica
. Dominican Republic
. East Germany
. Ecuador
. Egypt
. El Salvador
. Estonia
. Ethiopia
. Finland
. France
. . French Guiana
. . Guadeloupe
. . Martinique
. Gabon
. Gambia
. Georgia (Eurasia)
. Germany
. Ghana
. Greece
. Grenada
. Guatemala
. Guinea
. Guyana
. Haiti
. Honduras
. Hungary
. Iceland
. India
. Indonesia
. Iran
. Iraq
. Ireland
. Israel
. Italy
. Jamaica
. Japan
. Jordan
. Kazakhstan
. Kenya
. Kuwait
. Kyrgyzstan
. Laos
. Latvia
. Lebanon
. Lesotho
. Liberia
. Libya
. Liechtenstein
. Lithuania
. Luxembourg
. Madagascar
. Malawi
. Malaysia
. Maldive Islands
. Mali

. Malta
. Mauritania
. Mauritius
. Mexico
. Moldova
. Monaco
. Mongolia
. Morocco
. Mozambique
. Nepal
. Netherlands
. New Zealand
. Nicaragua
. Niger
. Nigeria
. North Korea
. Norway
. Oman
. Pakistan
. Panama
. Papua New Guinea
. Paraguay
. Peru
. Philippines
. Poland
. Portugal
. . Azores
. Qatar
. Republic of South Africa
. Romania
. Russian Federation
. Rwanda
. San Marino
. Saudi Arabia
. Senegal
. Serbska Republic
. Seychelles
. Sierra Leone
. Sikkim
. Singapore
. Slovakia
. Somalia
. South Korea
. Southern Yemen
. Spain
. . Canary Islands
. Sri Lanka
. Sudan
. Surinam
. Swaziland
. Sweden
. Switzerland
. Syria
. Taiwan
. Tajikistan
. Tanzania
. Thailand
. Tibet
. Togo
. Trinidad and Tobago
. Tunisia
. Turkey
. Turkmenistan
. U.S.S.R.
. Uganda
. Ukraine
. United Arab Emirates
. United Kingdom
. . England
. . Gibraltar
. . Northern Ireland
. . Scotland
. . Wales
. United States
. . Alabama
. . Alaska
. . Arizona
. . Arkansas
. . California
. . Colorado
. . Connecticut
. . Delaware
. . District of Columbia
. . Florida
. . Georgia
. . Guam
. . Hawaii
. . Idaho
. . Illinois
. . Indiana
. . Iowa
. . Kansas
. . Kentucky
. . Louisiana
. . Maine
. . Maryland
. . Massachusetts
. . Michigan
. . Minnesota
. . Mississippi
. . Missouri
. . Montana
. . Nebraska
. . Nevada
. . New Hampshire
. . New Jersey
. . New Mexico
. . New York
. . North Carolina
. . North Dakota
. . Ohio
. . Oklahoma
. . Oregon
. . Pennsylvania
. . Puerto Rico
. . Rhode Island
. . South Carolina
. . South Dakota
. . Tennessee
. . Texas
. . Utah
. . Vermont
. . Virgin Islands
. . Virginia
. . Washington
. . West Virginia
. . Wisconsin
. . Wyoming
. Uruguay
. Uzbekistan
. Vatican City
. Venezuela
. Vietnam
. West Germany
. Yemen
. Yugoslavia
. Zambia
. Zimbabwe

RT Africa
Asia
cities
Commonwealth of Independent States
communities
demography
developing nations
Europe
federations
Hong Kong
international law
minorities
Namibia
politics
regimes
Spanish Sahara
United Nations

NATO 3B satellite
GS **artificial satellites**
. communication **satellites**
. . Communications Technology **Satellite**
. . . **NATO 3B satellite**

natural convection
USE **free convection**

natural frequencies
USE **resonant frequencies**

natural gas
DEF (A) Hydrocarbons that exist as a gas or vapor at ordinary pressures and temperatures. Methane is the moMost important, but ethane, propane, or others may be present. (B) Gaseous hydrocarbons trapped in the zone of ground water saturation under pressure from, and partially dissolved in, underlying water or petroleum.
GS **fuels**
. chemical fuels
. . hydrocarbon fuels
. . . fossil fuels
. . . . **natural gas**
. . . . . liquefied natural gas
. gaseous fuels
. . **natural gas**
. . . liquefied natural gas
gases
. flammable gases
. . gaseous fuels
. . . **natural gas**
. . . liquefied natural gas
geophysical fluids
. **natural gas**
. . liquefied natural gas
organic compounds
. hydrocarbons
. . **natural gas**
. . . liquefied natural gas
resources
. Earth resources
. . fossil fuels
. . . **natural gas**
. . . . liquefied natural gas
RT methane
natural gas exploration
oil fields
petroleum products

natural gas exploration
DEF Searching the geological features to identify locations for stimulating wells for recovery of natural gas.
GS exploration
. **natural gas exploration**
RT drilling
methane
natural gas
oil exploration
photogeology

natural language (computers)
DEF A computer language whose rules reflect and describe current rather than prescribed usage. The language is often loose and ambiguous in interpretation.
GS languages
. programming languages
. . **natural language (computers)**
RT computer programming
context

data processing
knowledge representation

natural language processing
(added September 1993)
RT artificial intelligence
expert systems
human–computer interface
knowledge based systems
linguistics
machine translation
parsing algorithms
semantics
syntax

natural lasers
USE **lasers**

natural satellites
SN (EXCLUDES PLANETS)
UF *Dactyl*
moons
planetary satellites
GS celestial bodies
. **natural satellites**
. . icy satellites
. . . Ariel
. . . Callisto
. . . Dione
. . . Enceladus
. . . Europa
. . . Ganymede
. . . Hyperion
. . . Iapetus
. . . Mimas
. . . Rhea (astronomy)
. . . Tethys
. . . Titania
. . Jupiter satellites
. . . Adrastea
. . . Amalthea
. . . Carme
. . . Elara
. . . Galilean satellites
. . . . Callisto
. . . . Europa
. . . . Ganymede
. . . . Io
. . . Himalia
. . . Leda
. . . Lysithea
. . . Metis
. . . Pasiphae
. . . Sinope
. . . Thebe
. . Mars satellites
. . . Deimos
. . . Phobos
. . moon
. . Neptune satellites
. . . Galatea
. . . Larissa
. . . Naiad
. . . Nereid
. . . Proteus
. . . Triton
. . Pluto satellites
. . . Charon
. . Saturn satellites
. . . Calypso
. . . Dione
. . . Enceladus
. . . Epimetheus
. . . Helene
. . . Hyperion
. . . Iapetus
. . . Janus
. . . Mimas
. . . Pandora
. . . Phoebe
. . . Prometheus
. . . Rhea (astronomy)
. . . Telesto
. . . Tethys
. . . Titan
. . Uranus satellites
. . . Ariel
. . . Cordelia
. . . Miranda
. . . Oberon
. . . Puck
. . . Titania
. . . Umbriel
RT artificial satellites
Cynlid meteoroids
Earth–Moon system
meteoroids
moonlets
planets
Roche limit
satellite atmospheres
satellite surfaces
∞ satellites
Saturn rings
solar system
tektites
Uranus rings

nausea
DEF A feeling of discomfort in the region of the stomach, with aversion to food and a tendency to vomit.
GS signs and symptoms
. **nausea**
RT antiemetics and antinauseants
motion sickness
vomiting

nautical charts
DEF Charts and maps of oceans, coasts and harbors now compiled from satellite data for precision and correction of local errors.
GS charts
. **nautical charts**
RT navigation aids
navigation satellites
surface navigation

Navaho missile
GS missiles
. ramjet missiles
. . **Navaho missile**
. surface to surface missiles
. . cruise missiles
. . . **Navaho missile**
RT liquid propellant rocket engines
multistage rocket vehicles
ramjet engines

Navier–Stokes equation
DEF The equation of motion for a viscous fluid.
GS equations of motion
. **Navier–Stokes equation**
flow equations
. **Navier–Stokes equation**
RT Burger equation
computational fluid dynamics
direct numerical simulation
∞ equations
flow theory
incompressible flow
incompressible fluids
large eddy simulation
Milne–Thomson method
Newtonian fluids
Oseen approximation
Reynolds averaging
Reynolds equation
Reynolds stress
viscous flow
viscous fluids

navigation
DEF The practice or art of directing the movement of a craft from one point to another. Navigation usually implies the presence of a human, a navigator, aboard the craft.
GS **navigation**
. air navigation
. . all–weather air navigation
. . area navigation
. . nap–of–the–earth navigation
. . . terrain following
. autonomous navigation
. celestial navigation
. . Astroguide Navigation System
. . astronavigation
. dead reckoning
. digital navigation
. Doppler navigation
. hybrid navigation systems
. inertial navigation
. . Astroguide Navigation System
. . gimballess inertial navigation
. Omega Navigation System
. polar navigation
. radar navigation
. radio navigation
. . hyperbolic navigation
. . . Decca navigation
. . . LORAC navigation system
. . . loran
. . . . loran C
. . . . loran D
. . . Shoran
. . Tacan
. . VHF omnirange navigation
. space navigation
. . interplanetary navigation
. surface navigation
RT automatic flight control
azimuth
bay ice
declination
distance measuring equipment
∞ fixing
flight control
flight paths
Global Positioning System
guidance (motion)
gyroscopic coupling
homing devices
latitude measurement
locomotion
longitude measurement
orbital position estimation
plotting
position (location)
position errors
positioning
star trackers
stationkeeping
∞ systems
triangulation

navigation aids
GS **navigation aids**
. beacons
. . airport beacons
. . . discrete address beacon system

. . radar beacons
. . . discrete address beacon system
. . radio beacons
. . . omnidirectional radio ranges
. . . . self calibrating omnirange
. . radio direction finders
. Light Airborne Multipurpose System
. microwave scanning beam landing system
. navigation instruments
. . attitude indicators
. . . gyro horizons
. . compasses
. . . gyrocompasses
. . . magnetic compasses
. . . solar compasses
. . radio direction finders
. TERCOM
RT ∞ aids
air navigation
air traffic control
aircraft equipment
aircraft instruments
aircraft safety
airports
all-weather air navigation
altimeters
approach indicators
automatic flight control
automatic pilots
automatic traffic advisory and resolution
autonomous navigation
buoys
charts
Decca navigation
display devices
distance measuring equipment
echo sounding
flight control
flight management systems
flight paths
gyroestabilizers
head-up displays
heliports
homing devices
hybrid navigation systems
inertial navigation
Kalman filters
landing aids
laser range finders
LORAC navigation system
loran
loran C
loran D
maps
∞ mars
military air facilities
nautical charts
plotters
position indicators
radio navigation
range finders
reduced order filters
reference stars
sextants
Shoran
solar sensors
sonar
star trackers
surface navigation
Tacan
VHF omnirange navigation
weather

navigation instruments
GS navigation aids
. navigation instruments
. . attitude indicators
. . . gyro horizons
. . compasses
. . . gyrocompasses
. . . magnetic compasses
. . . solar compasses
. . radio direction finders
RT aircraft equipment
aircraft instruments
altimeters
autonomous navigation
boresight error
flight control
flight instruments
gimballess inertial navigation
horizon scanners
hybrid navigation systems
inertial platforms
∞ instruments
Kalman–Schmidt filtering
laser range finders
Light Airborne Multipurpose System
LORAC navigation system
loran
measuring instruments
position indicators
radar
solar sensors
star trackers
TERCOM

navigation satellites
GS artificial satellites
. navigation satellites
. . Aerosat satellites
. . Explorer 22 satellite
. . navigation technology satellites
. . NAVSTAR satellites
. . Nova satellites
. . Reisat
. . Transit Attitude Control satellite
. . Transit satellites
RT active satellites
ATS
geodetic satellites
LOCATES system
meteorological satellites
military spacecraft
nautical charts
passive satellites
satellite navigation systems
satellite networks
synchronous satellites
Transit navigation system

navigation technology satellites
DEF Class of navigation satellites utilizing the global positioning system as well as a precise frequency and timing system. Used for NTS.
UF *NTS*
GS artificial satellites
. navigation satellites
. . navigation technology satellites
RT NAVSTAR satellites

navigators
GS personnel
. navigators
RT flight crews
flying personnel

Navion aircraft
GS Navion aircraft
. G-1 aircraft
RT ∞ aircraft

Navion G-1 aircraft
USE G-1 aircraft

Navion Rangemaster aircraft
USE G-1 aircraft

NAVSTAR satellites
GS artificial satellites
. navigation satellites
. . NAVSTAR satellites
RT active satellites
ATS
geodetic satellites
INMARSAT satellites
navigation technology satellites
Reisat
satellite networks

navy
GS armed forces
. navy
RT aircraft carriers
ballistic missile submarines
Fleet Satellite Communication System
nuclear powered ships
ships
submarines
trident submarine
∞ vessels

NC-130 aircraft
USE C-130 aircraft

NDM semiconductor devices
SN (NEGATIVE DIFFERENTIAL MOBILITY SEMICONDUCTOR DEVICES)
UF *negative diff mobility semiconductors*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . NDM semiconductor devices
RT conduction bands
∞ devices
diffusivity
electron mobility
ionic mobility

Near Earth Asteroid Rendezvous Mission
(added March 1996)
GS space missions
. asteroid missions
. . Near Earth Asteroid Rendezvous Mission
. flyby missions
. . Near Earth Asteroid Rendezvous Mission
RT Comet Rendezvous Asteroid Flyby Mission
Earth orbits
EROS asteroid
rendezvous trajectories
Rosetta mission

near fields
GS electromagnetic fields
. near fields
RT antenna radiation patterns
antennas
electromagnetic radiation
far fields
laser arrays
radio equipment
sidelobes

near infrared radiation
SN (0.75 TO 3 MICRONS)
GS electromagnetic radiation
. infrared radiation

. . **near infrared radiation**
RT far infrared radiation
infrared photometry
light (visible radiation)
∞ radiation
radiative heat transfer
radiative transfer
terrestrial radiation
thermal radiation

near ultraviolet radiation
SN (2000 TO 4000 ANGSTROMS)
GS electromagnetic radiation
. ultraviolet radiation
. . **near ultraviolet radiation**
RT far ultraviolet radiation
light (visible radiation)
∞ radiation

near wakes
GS wakes
. **near wakes**

nearshore water
GS water
. **nearshore water**
. . coastal water
RT marine environments
oceans
sea water
vadose water
water depth
wetlands

Nebraska
GS nations
. United States
. . **Nebraska**
RT Missouri River (US)
Sand Hills Region (NE)

nebulae
DEF Clouds of interstellar gas and dust, seen either as a luminous patch of light or a dark cloud against a bright background. The term nebula was coined to describe objects that appeared fuzzy when viewed through early telescopes.
GS celestial bodies
. **nebulae**
. . Cassiopeia A
. . Crab nebula
. . Gum nebula
. . H I regions
. . H II regions
. . Herbig–Haro objects
. . Orion nebula
. . planetary nebulae
. . reflection nebulae
RT galaxies
interstellar matter
irregular galaxies
Maffei galaxies
Magellanic clouds
North Polar Spur (astronomy)
Ophiuchi clouds
Opik theory
solar corona
star formation
supernovae

neck (anatomy)
GS anatomy
. **neck (anatomy)**
RT vertebrae

needle bearings
GS bearings
. antifriction bearings
. . roller bearings
. . . **needle bearings**
RT ball bearings

needles
RT dendritic crystals
sewing
single crystals
surgical instruments

needs (data system)
UF *NASA End–to–End Data System*
GS data systems
. **needs (data system)**
end–to–end data systems
. **needs (data system)**
RT data acquisition
data processing
satellite instruments
∞ systems
VSAT (network)

neel temperature
GS temperature
. **neel temperature**
RT antiferromagnetism
magnetic permeability
phase transformations
specific heat
thermal expansion

negative conductance
RT avalanche diodes
gallium arsenides
Gunn effect
tunnel diodes

negative diff mobility semiconductors
USE **NDM semiconductor devices**

negative electron affinity
GS affinity
. **negative electron affinity**
RT electron affinity
electron emission
gallium arsenides
photoelectric emission
semiconductors (materials)

negative feedback
DEF Feedback which results in decreasing the amplification. Used for degenerative feedback.
UF *degenerative feedback*
GS feedback
. **negative feedback**
RT automatic control
damping
degeneration
feedback control
nonlinear feedback
oscillators
transfer functions

negative ions
DEF Ions singly or in groups which acquire negative charges by gaining one or more electrons.
GS ions
. **negative ions**
. . anions
RT free radicals
ionic mobility
nitrogen ions
oxygen ions
plasma physics

negative matter
(added August 1991)
SN (NOT ANTIMATTER)
DEF A hypothetical form of matter whose active–gravitational, passive–gravitational, inertial, and rest mass are opposite in sign to normal, positive matter. Negative matter is not antimatter.
GS matter (physics)
. **negative matter**
RT antimatter
condensed matter physics
extraterrestrial matter
mass

negative matter propulsion
(added August 1991)
GS propulsion
. spacecraft propulsion
. . **negative matter propulsion**
RT interplanetary flight
interstellar travel
matter–antimatter propulsion
rocket engines

negative resistance circuits
GS circuits
. **negative resistance circuits**
RT ∞ resistance
tunnel diodes

negative resistance devices
RT aluminum gallium arsenides
gallium arsenides
Gunn diodes
Gunn effect
MIM diodes
negatrons
parametric amplifiers
Ramsauer effect
∞ resistance
resonant tunneling

negatrons
DEF Negative electrons. Sometimes shortened to negatons.
GS particles
. charged particles
. . energetic particles
. . . electrons
. . . . **negatrons**
. corpuscular radiation
. . energetic particles
. . . electrons
. . . . **negatrons**
. elementary particles
. . fermions
. . . leptons
. . . . electrons
. . . . . **negatrons**
RT negative resistance devices

Nembutal (trademark)
GS drugs
. **Nembutal (trademark)**
ketones
. **Nembutal (trademark)**
sodium compounds
. **Nembutal (trademark)**
RT pentobarbital sodium

Nemesis (star)
UF *solar companion star*
GS celestial bodies
. stars
. . double stars
. . . binary stars
. . . . companion stars

. . . . . Nemesis (star)
RT dwarf stars
extinction
Oort cloud
solar neighborhood
stellar orbits
stellar systems

neodymium
GS chemical elements
. rare earth elements
. . neodymium
metals
. rare earth elements
. . neodymium
RT didymium

neodymium alloys
GS alloys
. rare earth alloys
. . neodymium alloys

neodymium compounds
GS rare earth compounds
. neodymium compounds
RT ∞ chemical compounds
∞ metal compounds

neodymium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . neodymium isotopes
. rare earth elements
. . neodymium isotopes
metals
. rare earth elements
. . neodymium isotopes

neodymium lasers
GS stimulated emission devices
. lasers
. . neodymium lasers
RT coherent light
glass lasers
optical pumping
rare earth elements

neon
GS chemical elements
. rare gases
. . neon
. . . liquid neon
. . . neon isotopes
gases
. rare gases
. . neon
. . . liquid neon
. . . neon isotopes

neon 19
USE neon isotopes

neon isotopes
UF *neon 19*
GS chemical elements
. nuclides
. . isotopes
. . . neon isotopes
. rare gases
. . neon
. . . neon isotopes
gases
. rare gases
. . neon
. . . neon isotopes

neopentane
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . pentanes
. . . . . neopentane

neoplasms
GS diseases
. tumors
. . neoplasms
. . . cancer
. . . . leukemias
RT carcinogens
cysts

neoprenes
USE chloroprene resins

Nepal
GS nations
. Nepal
RT Asia

nephanalysis
DEF A type of analysis using satellite cloud pictures to study the relationship between cloud formation and storm systems.
RT Alpine meteorology
anvil clouds
Atmospheric Cloud Physics Lab (Spacelab)
cap clouds
chemical analysis
cirrocumulus clouds
cirrostratus clouds
cloud cover
cloud physics
clouds (meteorology)
convection clouds
meteorological instruments
meteorology
nephelometers
precipitation (meteorology)
synoptic measurement
synoptic meteorology
weather forecasting

nepheline
GS aluminum compounds
. nepheline
minerals
. nepheline
potassium compounds
. nepheline
silicon compounds
. silicates
. . nepheline
sodium compounds
. nepheline
RT nephelite

nephelite
GS aluminum compounds
. nephelite
chalcogenides
. oxides
. . silicon oxides
. . . nephelite
minerals
. nephelite
silicon compounds
. silicon oxides
. . nephelite
RT nepheline

nephelometers
DEF General name for instruments which measure, at more than one angle, the scattering function of particles suspended in a medium. Instruments for chemical analysis by measuring the light scattering properties of a suspension.
GS measuring instruments
. optical measuring instruments
. . nephelometers
optical equipment
. optical measuring instruments
. . nephelometers
RT nephanalysis
optical measurement
photometers

nephritis
GS diseases
. kidney diseases
. . nephritis
RT bacterial diseases

Neptune (planet)
GS celestial bodies
. planets
. . gas giant planets
. . . Neptune (planet)
RT Galatea
Larissa
Naiad
Neptune atmosphere
Neptune satellites
Nereid
Proteus
Triton
Voyager 2 spacecraft

Neptune atmosphere
DEF The atmosphere of the planet Neptune which is primarily composed of hydrogen and methane.
GS environments
. extraterrestrial environments
. . planetary environments
. . . planetary atmospheres
. . . . Neptune atmosphere
RT aerospace environments
∞ atmospheres
gas giant planets
hydrogen
methane
Neptune (planet)
planetary ionospheres
Triton

Neptune satellites
(added August 1989)
GS celestial bodies
. natural satellites
. . Neptune satellites
. . . Galatea
. . . Larissa
. . . Naiad
. . . Nereid
. . . Proteus
. . . Triton
RT Neptune (planet)

neptunium
GS chemical elements
. actinide series
. . transuranium elements
. . . neptunium
. . . . neptunium isotopes
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . neptunium
. . . . . neptunium isotopes
metals

. actinide series
. . transuranium elements
. . . **neptunium**
. . . . neptunium isotopes

neptunium compounds
GS actinide series compounds
. **neptunium compounds**
RT ∞ chemical compounds
∞ metal compounds

neptunium isotopes
GS chemical elements
. actinide series
. . transuranium elements
. . . neptunium
. . . . **neptunium isotopes**
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . neptunium
. . . . . **neptunium isotopes**
metals
. actinide series
. . transuranium elements
. . . neptunium
. . . . **neptunium isotopes**

Nereid
(added August 1989)
GS **celestial bodies**
. **natural satellites**
. . **Neptune satellites**
. . . **Nereid**
RT Neptune (planet)

Nernst generators
USE **thermomagnetic cooling**

Nernst heat theorem
USE **Nernst–Ettingshausen effect**

Nernst–Ettingshausen effect
UF *Nernst heat theorem*
GS galvanomagnetic effects
. **Nernst–Ettingshausen effect**
RT ∞ effects
temperature effects
thermomagnetic effects

NERVA (engine)
USE **nuclear engine for rocket vehicles**

nerves
GS anatomy
. nervous system
. . **nerves**
. . . ganglia
. . . oculomotor nerves
RT carotid sinus body
carotid sinus reflex
His bundle
myelin
neuritis
neurons
sciatic region
synapses

nervous system
UF *vasomotor nervous system*
GS anatomy
. **nervous system**
. . **afferent nervous systems**
. . **autonomic nervous system**
. . . sympathetic nervous system
. . central nervous system
. . . brain
. . . . brain stem
. . . . cerebellum
. . . . cerebral ventricles
. . . . cerebrum
. . . . . cerebral cortex
. . . . . occipital lobes
. . . . diencephalon
. . . . . hypothalamus
. . . . . pineal gland
. . . . . thalamus
. . . . hippocampus
. . . spinal cord
. . **efferent nervous systems**
. . **nerves**
. . . **ganglia**
. . . **oculomotor nerves**
. . **peripheral nervous system**
RT **electrophysiology**
homeostasis
myelin
neurasthenia
neuritis
neuroglia
neurons
neuropsychiatry
neurotransmitters
proprioceptors
psychopharmacology
sense organs
synapses
∞ **systems**

Netherlands
UF *Holland*
GS nations
. **Netherlands**
RT Astronomical Netherlands Satellite
Europe
Netherlands space program
Surinam

Netherlands space program
(added March 1989)
GS programs
. space programs
. . European space programs
. . . **Netherlands space program**
RT Astronomical Netherlands Satellite
Infrared Astronomy Satellite
Netherlands

∞ **nets**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED — CONSULT THE TERMS LISTED BELOW)
RT coordinates
distribution functions
geodetic coordinates
graph theory
Kirchhoff law of networks
netting (materials/structures)
networks
Petri nets
structured grids (mathematics)
superposition (mathematics)
topology
trees (mathematics)

netting (materials/structures)
(added July 1995)
RT camouflage
coverings
crosslinking
crystal growth
fibers
filament winding
laminates
molecular chains
∞ nets
parachute fabrics
webs (sheets)

network analysis
UF *Tellegen theory*
GS **network analysis**
. critical path method
. sneak circuit analysis
RT ∞ analyzing
circuits
data flow analysis
distributed parameter systems
duality principle
electric terminals
equivalent circuits
Foster theory
gyrators
hydraulic equipment
insertion
Kirchhoff law of networks
LC circuits
∞ paths
RC circuits
RL circuits
RLC circuits
signal flow graphs
superposition (mathematics)

network control
DEF The management of acquisition, routing, and switching primarily in satellite communication.
RT communication networks
communication satellites
computer networks
∞ control
local area networks
packet switching
satellite networks
transmission efficiency

network synthesis
UF *Tellegen theory*
RT communication theory
equivalent circuits
hydraulic equipment
Kirchhoff law of networks
LC circuits
networks
RC circuits
Richards theorem
RL circuits
RLC circuits
superposition (mathematics)
switching theory
∞ synthesis
topology

networks
GS **networks**
. **belief networks**
. **communication networks**
. . Aloha system
. . Deep Space Network
. . **internets**
. . . ARPA computer network
. . . World Wide Web
. . local area networks
. . NASCOM network
. . VSAT (network)
. . wide area networks
. **computer networks**
. . **internets**
. . . ARPA computer network
. . . World Wide Web
. . client server systems
. . local area networks
. . wide area networks

. defense communications system (DCS)
. electric networks
. iterative networks
. neural nets
. Orion (radio interferometry network)
. Petri nets
. quadrupole networks
. satellite networks
. . Argos system
. . satellite constellations
. . VSAT (network)
. tracking networks
. . Deep Space Network
. . Global Tracking Network
. . manned space flight network
. . MATTS (systems)
. . polystation doppler tracking system
. . radar networks
. . space detection and tracking system
. . Space Flight Tracking and Data Network
. . STDN (network)
RT data links
educational television
gravimetry
ground stations
information systems
∞ nets
network synthesis
protocol (computers)
telecommunication

Neumann problem
GS analysis (mathematics)
. real variables
. . **Neumann problem**
boundary value problems
. **Neumann problem**
RT differential equations
partial differential equations
∞ problems

neural nets
GS networks
. **neural nets**
RT belief networks
cybernetics
genetic algorithms
logic circuits

neurasthenia
GS diseases
. **neurasthenia**
RT nervous system

neuristors
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **neuristors**
RT bionics

neuritis
GS diseases
. **neuritis**
RT nerves
nervous system

neuroblasts
GS cells (biology)
. neurons
. . **neuroblasts**
RT embryology

neuroglia
GS tissues (biology)
. **neuroglia**
RT brain
cells (biology)
ganglia
nervous system
spinal cord

neurology
DEF The study of the anatomy, physiology, and pathology of the nervous system. Used for neuroscience.
UF *neuroscience*
GS medical science
. **neurology**
RT brain
chemical defense
electrophysiology
life sciences
neuropsychiatry
thresholds (perception)

neuromuscular transmission
RT bioelectricity
cholinesterase
neurotransmitters
peripheral nervous system
synapses

neuron transmission
USE **bioelectricity**

neurons
GS cells (biology)
. **neurons**
. . axons
. . neuroblasts
RT blood–brain barrier
myelin
nerves
nervous system
synapses
syncoders

neurophysiology
GS physiology
. **neurophysiology**
RT dopamine
ganglia
information processing (biology)
ontogeny
psychotropic drugs
∞ science

neuropsychiatry
GS medical science
. psychiatry
. . **neuropsychiatry**
RT human behavior
∞ medicine
mental health
nervous system
neurology
psychotherapy

neuroscience
USE **neurology**

neuroses
GS **neuroses**
. neurotic depression
RT fear
fear of flying
psychoses

neurospora
GS plants (botany)
. fungi
. . **neurospora**
RT genetics

neurotic depression
GS neuroses
. **neurotic depression**
RT ∞ depression
psychotic depression

neurotransmitters
DEF Chemical substances secreted by the terminal ends of axons, which stimulate a muscle fiber contraction or an impulse in other neurons.
RT axons
catecholamine
cells (biology)
dopamine
nervous system
neuromuscular transmission
synapses

neurotropism
GS tropism
. **neurotropism**

neutral atmospheres
RT ∞ atmospheres
neutral gases

neutral atoms
DEF Atoms in which the number of electrons surrounding the nucleus equals the number of protons in the nucleus resulting in no net electric charge.
GS atoms
. **neutral atoms**
RT atomic beams
charge distribution
∞ elements
H I regions
neutral beams
neutral gases

neutral beams
GS beams (radiation)
. particle beams
. . **neutral beams**
. . . molecular beams
. . . neutron beams
RT atomic beams
beam injection
beam neutralization
neutral atoms
particles
pion beams

neutral buoyancy simulation
GS environmental tests
. underwater tests
. . **neutral buoyancy simulation**
simulation
. environment simulation
. . space environment simulation
. . . weightlessness simulation
. . . . **neutral buoyancy simulation**
RT buoyancy
space simulators
weightlessness

neutral currents
DEF Weak interaction currents that carry zero electric charge.
RT current distribution
gravitational collapse
neutral particles
neutrinos
neutron stars

particle interactions
stellar evolution

neutral gases
DEF In astronomy, gas clouds of some nebulae which have not been ionized by hot stars.
GS gases
. **neutral gases**
RT cosmic gases
H I regions
hydrogen clouds
interplanetary gas
interstellar gas
ionized gases
neutral atmospheres
neutral atoms
plasmas (physics)

neutral particles
GS particles
. **neutral particles**
. . gravitinos
. . neutrons
. . . cold neutrons
. . . fast neutrons
. . . photoneutrons
. . . solar neutrons
. . . thermal neutrons
RT electron recombination
neutral currents

neutral sheets
RT atmospheric physics
charged particles
Earth magnetosphere
particle motion
plasma physics
∞ sheets

neutralizers
RT additives
∞ agents
buffers (chemistry)
dischargers
inhibitors
preservatives
retardants
stabilizers (agents)
suppressors

neutrino beams
DEF Organized collections of neutrinos traveling outward from the source.
GS beams (radiation)
. particle beams
. . **neutrino beams**

neutrinos
DEF Subatomic particles of zero, or near zero, rest mass, having no electric charge, postulated by Fermi (1934) in order to explain apparent contradictions to the law of conservation of energy in beta particle emission.
GS particles
. elementary particles
. . fermions
. . . leptons
. . . . **neutrinos**
. . . . . solar neutrinos
RT antineutrinos
dark matter
gravitinos
neutral currents

neutron absorbers
GS absorbers (materials)
. **neutron absorbers**
RT control rods
moderators
poisoning (reaction inhibition)
radiation absorption
radiation shielding

neutron activation analysis
GS activation analysis
. **neutron activation analysis**
chemical tests
. chemical analysis
. . **neutron activation analysis**
RT mass spectrometers
microanalysis
qualitative analysis
quantitative analysis
spectroscopic analysis

neutron beams
GS beams (radiation)
. particle beams
. . neutral beams
. . . **neutron beams**
nuclear radiation
. **neutron beams**
RT atomic beams
particles
pion beams
proton beams

neutron counters
UF *neutron detectors*
GS measuring instruments
. counters
. . radiation counters
. . . **neutron counters**
. . . . neutron spectrometers
. radiation measuring instruments
. . radiation counters
. . . **neutron counters**
. . . . neutron spectrometers
RT dosimeters
Geiger counters
ionization chambers
proportional counters
scintillation counters
spark chambers

neutron cross sections
RT absorption cross sections
∞ cross sections
nuclear particles
scattering cross sections
stopping power

neutron decay
GS decay
. particle decay
. . **neutron decay**
RT hot atoms

neutron detectors
USE **neutron counters**

neutron diffraction
GS diffraction
. **neutron diffraction**
RT crystallography

neutron distribution
GS distribution (property)
. **neutron distribution**
RT nuclear particles

neutron emission
GS decay
. radioactive decay
. . **neutron emission**
emission
. particle emission
. . **neutron emission**
nuclear reactions
. radioactive decay
. . **neutron emission**
RT neutrons
selection rules (nuclear physics)

neutron flux
USE **flux (rate)**

neutron flux density
SN (LIMITED TO NEUTRON EMISSION OR DETECTION RATE PER UNIT AREA)
DEF A measure of the intensity of neutron radiation within a given range of neutron energies; the product of the neutron density and velocity, measured in neutrons per square meter-second or neutrons per square centimeter-second.
GS rates (per time)
. flux density
. . radiant flux density
. . . particle flux density
. . . . **neutron flux density**
RT high flux isotope reactors
irradiance
nuclear fission
radiance
radiancy
radiation shielding
solar neutrons

neutron irradiation
GS irradiation
. **neutron irradiation**
RT ion irradiation
transmutation

neutron physics
RT ∞ physics
∞ science

neutron radiography
DEF Nondestructive testing and inspection utilizing neutron beams from nuclear reactors, particle accelerators, and/or radioisotopes. Imagery displaying structural defects utilizes neutron image recorders or screens.
GS imagery
. radiography
. . **neutron radiography**
nondestructive tests
. **neutron radiography**
RT ∞ materials tests

neutron scattering
UF *Legendre code*
GS nuclear reactions
. nuclear scattering
. . **neutron scattering**
scattering
. nuclear scattering
. . **neutron scattering**
RT elementary particles
nuclear particles
resonance scattering

neutron sources
GS radiation sources
. **neutron sources**
RT linear accelerators
nuclear fuels
nuclear research and test reactors
particle accelerators
spent fuels

neutron spectra
GS spectra
. energy spectra
. . **neutron spectra**

neutron spectrometers
UF *triple axis spectrometers*
GS measuring instruments
. counters
. . radiation counters
. . . neutron counters
. . . . neutron spectrometers
. radiation measuring instruments
. . radiation counters
. . . neutron counters
. . . . neutron spectrometers
. spectrometers
. . neutron spectrometers

neutron stars
SN (EXCLUDES TRACKS OF PARTICLES EMANATING FROM A NUCLEAR COLLISION)
GS celestial bodies
. stars
. . neutron stars
. . . pulsars
RT degenerate matter
gravitational binding energy
gravitational lenses
neutral currents
starquakes
supernova remnants
x ray binaries
x ray stars

neutron thermalization
GS energy absorption
. moderation (energy absorption)
. . thermalization (energy absorption)
. . . neutron thermalization

neutron transmutation
USE nuclear reactions

neutrons
DEF Subatomic particles with no electric charge, and with a mass of 1.67482 times 10 to the minus 24 gram.
GS particles
. elementary particles
. . fermions
. . . neutrons
. . . . cold neutrons
. . . . fast neutrons
. . . . photoneutrons
. . . . solar neutrons
. . . . thermal neutrons
. neutral particles
. . neutrons
. . . cold neutrons
. . . fast neutrons
. . . photoneutrons
. . . solar neutrons
. . . thermal neutrons
RT baryons
charged particles
corpuscular radiation
cosmic rays
neutron emission
nuclear radiation
nuclei (nuclear physics)
nucleon potential
nucleons
radiation effects
radiation shielding

Nevada
GS nations
. United States
. . Nevada
RT Great Basin (US)
Lake Tahoe (CA–NV)
Pyramid Lake (NV)
Southern California

New Brunswick
GS nations
. Canada
. . New Brunswick

New England (US)
GS regions
. New England (US)
RT United States

New Guinea (Island)
GS landforms
. islands
. . Pacific islands
. . . New Guinea (Island)
RT Papua New Guinea
Torres Strait

New Hampshire
GS nations
. United States
. . New Hampshire
RT St Lawrence Valley (North America)

New Haven (CT)
GS cities
. New Haven (CT)
RT Connecticut

New Jersey
GS nations
. United States
. . New Jersey
RT Delaware Bay (US)
Delaware River Basin (US)
Hudson River (NY–NJ)

New Mexico
GS nations
. United States
. . New Mexico
RT Colorado Plateau (US)
Rio Grande (North America)

NEW MOONS project
GS programs
. NASA programs
. . NASA space programs
. . . NEW MOONS project
. projects
. . NEW MOONS project
. space programs
. . NASA space programs
. . . NEW MOONS project
RT nuclear propulsion
structural weight
weight analysis

New York
GS nations
. United States
. . New York
RT Adirondack Mountains (NY)
Delaware River Basin (US)
Hudson River (NY–NJ)
Lake Champlain Basin (NY–VT)
Long Island (NY)
New York City (NY)
St Lawrence Valley (North America)
Susquehanna River Basin (MD–NY–PA)

New York City (NY)
GS cities
. New York City (NY)
RT New York

New Zealand
GS landforms
. islands
. . Pacific islands
. . . New Zealand
nations
. New Zealand
RT New Zealand space program

New Zealand space program
(added June 1989)
GS programs
. space programs
. . New Zealand space program
RT New Zealand

Newfoundland
GS landforms
. islands
. . Newfoundland
nations
. Canada
. . Newfoundland

news
RT documentation

news media
RT data acquisition
information
Internet resources
∞ journals

newton
DEF The unit of force in the SI system; the force which gives to a mass of 1 kilogram an acceleration of 1 meter per second squared.
RT ∞ force
kinetics
Newtonian fluids
nonNewtonian fluids

Newton methods
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . Newton methods
. . . . Newton–Raphson method
. . iteration
. . . Newton methods
. . . . Newton–Raphson method
RT iterative solution
problem solving
roots of equations

Newton pressure law
GS laws
. Newton pressure law
RT compressible flow
laminar flow
Newtonian fluids
Prandtl–Meyer expansion
pressure
pressure distribution

Newton second law
GS kinetics
. Newton second law
laws
. Newton second law
RT conservation
momentum theory

Newton Theory
GS kinetics
. Newton Theory
theoretical physics
. Newton Theory
RT conservation laws

Newtonian fluids
nonNewtonian fluids
nonrelativistic mechanics
∞ theories

Newton–Busemann law
GS laws
. **Newton–Busemann law**

Newton–Raphson method
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . Newton methods
. . . . **Newton–Raphson method**
. . iteration
. . . Newton methods
. . . . **Newton–Raphson method**
RT ∞ methodology

Newtonian fluids
RT anisotropic fluids
∞ fluids
Navier–Stokes equation
newton
Newton pressure law
Newton Theory
nonNewtonian fluids
stress–strain–time relations
viscous fluids

Nicaragua
GS nations
. **Nicaragua**
RT Central America

Nichrome (trademark)
GS alloys
. nickel alloys
. . **Nichrome (trademark)**

nickel
GS chemical elements
. **nickel**
. . nickel isotopes
metals
. transition metals
. . **nickel**
. . . nickel isotopes
RT constantan

nickel alloys
GS alloys
. **nickel alloys**
. . Astroloy (trademark)
. . Hastelloy (trademark)
. . Inconel (trademark)
. . kamacite
. . Monel (trademark)
. . Nichrome (trademark)
. . nitinol alloys
. . Rene 41
. . Rene 63
. . Rene 77
. . Rene 95
. . Udimet alloys
. . Waspaloy
RT aluminides
gold alloys
heat resistant alloys
nickel aluminides
nimonic alloys
Permalloys (trademark)
shape memory alloys
silicon alloys
stainless steels
sulfidation

nickel aluminides
(added June 1997)
GS aluminum compounds
. aluminides
. . **nickel aluminides**
nickel compounds
. **nickel aluminides**
RT intermetallics
nickel alloys

nickel cadmium batteries
DEF Alkaline storage batteries in which the positive active material is nickel oxide and the negative contains cadmium.
UF *cadmium nickel batteries*
GS electrochemical cells
. electric batteries
. . storage batteries
. . . **nickel cadmium batteries**
RT dry cells
silver cadmium batteries

nickel coatings
GS coatings
. metal coatings
. . **nickel coatings**
RT corrosion prevention
metal films
protective coatings

nickel compounds
GS **nickel compounds**
. cohenite
. nickel aluminides
. nickel fluorides
. nickel oxides
. schreibersite
RT ∞ chemical compounds
Group 8 compounds
∞ metal compounds

nickel fluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **nickel fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **nickel fluorides**
. . metal halides
. . . metal fluorides
. . . . **nickel fluorides**
nickel compounds
. **nickel fluorides**

nickel hydrogen batteries
GS electrochemical cells
. electric batteries
. . storage batteries
. . . **nickel hydrogen batteries**
RT energy storage
hydrogen–based energy
spacecraft power supplies

nickel iron batteries
DEF Alkaline–type electric cells using potassium hydroxide as the electrolyte and anodes of steel wool substrate with active iron material and cathodes of nickel plated steel wool substrate with active nickel material.
GS electrochemical cells
. electric batteries
. . **nickel iron batteries**
RT lead acid batteries
nickel zinc batteries
storage batteries

nickel isotopes
GS chemical elements
. nickel
. . **nickel isotopes**
. nuclides
. . isotopes
. . . **nickel isotopes**
metals
. transition metals
. . nickel
. . . **nickel isotopes**

nickel oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **nickel oxides**
nickel compounds
. **nickel oxides**

nickel plate
GS plating
. **nickel plate**
RT electroplating
gold coatings

nickel steels
DEF Steels containing nickel as a main alloying element.
GS alloys
. iron alloys
. . steels
. . . **nickel steels**
RT stainless steels

nickel zinc batteries
UF *zinc nickel batteries*
GS electric generators
. direct power generators
. . primary batteries
. . . dry cells
. . . . **nickel zinc batteries**
electrochemical cells
. electric batteries
. . primary batteries
. . . dry cells
. . . . **nickel zinc batteries**
. . storage batteries
. . . **nickel zinc batteries**
RT nickel iron batteries

nicotinamide
GS bases (chemical)
. alkaloids
. . **nicotinamide**
nitrogen compounds
. alkaloids
. . **nicotinamide**
. amides
. . **nicotinamide**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . alkaloids
. . . . **nicotinamide**
vitamins
. **nicotinamide**

nicotine
GS bases (chemical)
. alkaloids
. . **nicotine**
nitrogen compounds
. alkaloids
. . **nicotine**
organic compounds
. cyclic compounds
. . heterocyclic compounds

. . alkaloids
. . . nicotine
RT tobacco

nicotinic acid
GS acids
. carboxylic acids
. . nicotinic acid
organic compounds
. carboxylic acids
. . nicotinic acid
. cyclic compounds
. . heterocyclic compounds
. . . nicotinic acid
vitamins
. nicotinic acid

Niger
GS nations
. Niger
RT Africa

Nigeria
GS nations
. Nigeria
RT Africa

night
RT darkening
darkness
daytime
diurnal variations
evening
shadows
sky brightness
twilight glow

night airglow
USE nightglow

night E layer
USE E region
night sky

night F layer
USE F region
night sky

night flights (aircraft)
RT ∞ aircraft
approach control
blind landing
darkness
flight instruments
instrument approach
instrument landing systems
nap-of-the-earth navigation
radar
radio beacons
visibility

night sky
UF *night E layer*
night F layer
GS sky
. night sky
RT airglow
auroras
gegenschein
nightglow
sky brightness
twilight glow
zodiacal light

night vision
GS vision
. night vision
RT dark adaptation
enhanced vision
image intensifiers
light adaptation
microchannels
nap-of-the-earth navigation

nightglow
UF *night airglow*
GS atmospheric radiation
. sky radiation
. . airglow
. . . nightglow
electromagnetic radiation
. light (visible radiation)
. . sky radiation
. . . airglow
. . . . nightglow
RT biometeorology
night sky
radio auroras
sky brightness

nigotrons
GS electron tubes
. vacuum tubes
. . microwave tubes
. . . magnetrons
. . . . nigotrons
microwave equipment
. microwave oscillators
. . magnetrons
. . . nigotrons
. microwave tubes
. . magnetrons
. . . nigotrons
oscillators
. microwave oscillators
. . magnetrons
. . . nigotrons

Nihon aircraft
UF *NAMC aircraft*
GS Nihon aircraft
. YS-11 aircraft
RT ∞ aircraft

Nihon YS-11 aircraft
USE YS-11 aircraft

Nike booster rocket engines
GS engines
. rocket engines
. . booster rocket engines
. . . Nike booster rocket engines
. . solid propellant rocket engines
. . . Nike booster rocket engines
RT ∞ Nike rockets

Nike missiles
GS missiles
. surface to air missiles
. . Nike missiles
. . . Nike-Ajax missile
. . . Nike-Hercules missile
. . . Nike-Zeus missile
RT antiaircraft missiles
antimissile missiles
∞ Nike rockets
Sentinel system

Nike project
GS programs
. projects
. . Nike project
RT ∞ Nike rockets

Nike rocket vehicles
GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . Nike-Apache rocket vehicle
. . . Nike-Cajun rocket vehicle
. . . Nike-Hydac rocket vehicle
. . . Nike-Iroquois rocket vehicle
. . . Nike-Javelin rocket vehicle
. . . Nike-Tomahawk rocket vehicle
RT ∞ Nike rockets
∞ vehicles

∞ Nike rockets
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Nike booster rocket engines
Nike missiles
Nike project
Nike rocket vehicles

Nike X systems
GS weapon systems
. missile systems
. . Nike X systems
RT antimissile missiles
missiles
surface to air missiles
∞ systems

Nike-Ajax missile
GS missiles
. antiaircraft missiles
. . Nike-Ajax missile
. surface to air missiles
. . Nike missiles
. . . Nike-Ajax missile
RT Argo rocket vehicles
EXOS sounding rocket
liquid propellant rocket engines
solid propellant rocket engines
Trailblazer 1 reentry vehicle

Nike-Apache rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . Nike-Apache rocket vehicle
RT solid propellant rocket engines

Nike-Cajun rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . Nike-Cajun rocket vehicle
RT Cajun rocket vehicle
solid propellant rocket engines

Nike-Hercules missile
GS missiles
. antiaircraft missiles
. . Nike-Hercules missile
. surface to air missiles
. . Nike missiles
. . . Nike-Hercules missile
RT solid propellant rocket engines

Nike-Hydac rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . Nike-Hydac rocket vehicle
RT ∞ vehicles

Nike-Iroquois rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . Nike-Iroquois rocket vehicle
RT ∞ vehicles

Nike-Javelin rocket vehicle
GS rocket vehicles

multistage rocket vehicles
Nike rocket vehicles
Nike–Javelin rocket vehicle
RT solid propellant rocket engines
sounding rockets

Nike–Tomahawk rocket vehicle
GS rocket vehicles
multistage rocket vehicles
Nike rocket vehicles
Nike–Tomahawk rocket vehicle
RT solid propellant rocket engines

Nike–Zeus missile
UF *Zeus missile*
GS missiles
antimissile missiles
Nike–Zeus missile
surface to air missiles
Nike missiles
Nike–Zeus missile
RT solid propellant rocket engines
Spartan missile
Sprint missile

nimbostratus clouds
UF *nimbus clouds*
GS clouds (meteorology)
nimbostratus clouds
RT cumulonimbus clouds
precipitation (meteorology)
stratus clouds

Nimbus 1 satellite
GS artificial satellites
meteorological satellites
Nimbus satellites
Nimbus 1 satellite
RT cloud photography
Thor Agena launch vehicle

Nimbus 2 satellite
GS artificial satellites
meteorological satellites
Nimbus satellites
Nimbus 2 satellite
RT cloud photography
Thor Agena launch vehicle

Nimbus 3 satellite
GS artificial satellites
meteorological satellites
Nimbus satellites
Nimbus 3 satellite

Nimbus 4 satellite
GS artificial satellites
meteorological satellites
Nimbus satellites
Nimbus 4 satellite

Nimbus 5 satellite
GS artificial satellites
meteorological satellites
Nimbus satellites
Nimbus 5 satellite

Nimbus 6 satellite
GS artificial satellites
meteorological satellites
Nimbus satellites
Nimbus 6 satellite

Nimbus 7 satellite
DEF One in a series of meteorological satellites
GS artificial satellites
meteorological satellites
Nimbus satellites
Nimbus 7 satellite
RT Total Ozone Mapping Spectrometer

nimbus clouds
USE **nimbostratus clouds**

Nimbus project
GS programs
NASA programs
NASA space programs
Nimbus project
projects
Nimbus project
space programs
NASA space programs
Nimbus project
RT cloud photography
meteorological satellites
satellite observation

Nimbus satellites
GS artificial satellites
meteorological satellites
Nimbus satellites
Nimbus 1 satellite
Nimbus 2 satellite
Nimbus 3 satellite
Nimbus 4 satellite
Nimbus 5 satellite
Nimbus 6 satellite
Nimbus 7 satellite
RT cloud photography
ESSA satellites
infrared photography
satellite observation
Thor Agena launch vehicle

nimonic alloys
GS alloys
heat resistant alloys
nimonic alloys
RT iron alloys
nickel alloys

NIMPHE (engine)
USE **hydrazine engines**

Nimrod accelerator
GS particle accelerators
Nimrod accelerator
RT ∞ accelerators

niobates
GS niobium compounds
niobates
lithium niobates
RT **euxenite**
oxides
∞ oxygen compounds

niobium
UF *columbium*
GS chemical elements
niobium
niobium isotopes
niobium 95
metals
refractory metals
niobium
niobium isotopes
niobium 95
transition metals
niobium
niobium isotopes
niobium 95
refractory materials
refractory metals
niobium
niobium isotopes
niobium 95

niobium 95
GS chemical elements
niobium
niobium isotopes
niobium 95
nuclides
isotopes
niobium isotopes
niobium 95
radioactive isotopes
niobium 95
metals
refractory metals
niobium
niobium isotopes
niobium 95
transition metals
niobium
niobium isotopes
niobium 95
refractory materials
refractory metals
niobium
niobium isotopes
niobium 95

niobium alloys
GS alloys
heat resistant alloys
refractory metal alloys
niobium alloys
refractory materials
refractory metal alloys
niobium alloys
RT hafnium alloys

niobium carbides
GS carbon compounds
carbides
niobium carbides
niobium compounds
niobium carbides

niobium compounds
GS **niobium compounds**
niobates
lithium niobates
niobium carbides
niobium iodides
niobium oxides
niobium stannides
RT ∞ chemical compounds
Group 5B compounds
∞ metal compounds

niobium iodides
GS halogen compounds
halides
metal halides
niobium iodides
iodine compounds
iodides
niobium iodides
niobium compounds
niobium iodides

niobium isotopes
GS chemical elements
niobium
niobium isotopes
niobium 95
nuclides
isotopes
niobium isotopes
niobium 95
metals

. refractory metals
. . niobium
. . . niobium isotopes
. . . . niobium 95
. transition metals
. . niobium
. . . niobium isotopes
. . . . niobium 95
refractory materials
. refractory metals
. . niobium
. . . niobium isotopes
. . . . niobium 95

niobium oxides
GS chalcogenides
. oxides
. . metal oxides
. . . niobium oxides
niobium compounds
. niobium oxides

niobium stannides
GS niobium compounds
. niobium stannides
tin compounds
. stannides
. . niobium stannides

NIPS (system)
USE **NASA Interactive Planning System**

nitinol alloys
DEF Shape memory alloys of titanium and nickel.
GS alloys
. nickel alloys
. . nitinol alloys
. shape memory alloys
. . nitinol alloys
. titanium alloys
. . nitinol alloys

nitramine propellants
GS propellants
. rocket propellants
. . nitramine propellants
. solid propellants
. . nitramine propellants
RT oxidizers

nitrasol explosives
GS explosives
. nitrasol explosives
propellants
. nitrasol explosives

nitrate esters
GS esters
. nitrate esters
. . isopropyl nitrate
. . propyl nitrate
nitrogen compounds
. nitrate esters
. . isopropyl nitrate
. . propyl nitrate

nitrates
GS nitrogen compounds
. nitrates
. . dinitrates
. . inorganic nitrates
. . . ammonium nitrates
. . . hydrazine nitrate
. . . potassium nitrates
. . . silver nitrates
. . . sodium nitrates
. . methyl nitrate
. . organic nitrates
. . . cellulose nitrate
. . . nitroforms
. . . . hydrazine nitroform
. . . nitroglycerin
. . . PETN

nitration
GS chemical reactions
. nitration
RT denitrogenation

nitric acid
GS acids
. nitric acid
nitrogen compounds
. nitric acid
RT nitrous acid

nitric oxide
GS chalcogenides
. oxides
. . nitrogen oxides
. . . nitric oxide
nitrogen compounds
. nitrogen oxides
. . nitric oxide
RT nitroxyls

nitrides
GS nitrogen compounds
. nitrides
. . boron nitrides
. . metal nitrides
. . . aluminum nitrides
. . . beryllium nitrides
. . . gallium nitrides
. . . tantalum nitrides
. . . titanium nitrides
. . . zirconium nitrides
. . oxynitrides
. . silicon nitrides
RT ceramic nuclear fuels
molten salts

nitriding
GS chemical reactions
. nitriding
hardening (materials)
. nitriding
heat treatment
. nitriding

nitriles
GS nitriles
. acetonitrile
. acrylonitriles
. . polyacrylonitrile
. malononitrile
. phosphonitriles
RT cyano compounds

nitrites
GS nitrogen compounds
. nitrites

nitro compounds
GS nitrogen compounds
. nitro compounds
. . nitrobenzenes
. . . trinitrotoluene
. . nitroglycerin
. . nitroguanidine
. . nitromethane
. . nitropropane
. . picrates
. . . ammonium picrates
. . polybutadiene tetranitramine
. . tetryl
. . trinitro compounds
RT chemical compounds

nitrosamines
GS amines
. nitrosamines
nitrogen compounds
. nitrosamines

nitrobacter
GS microorganisms
. bacteria
. . nitrobacter

nitrobenzenes
GS nitrogen compounds
. nitro compounds
. . nitrobenzenes
. . . trinitrotoluene

nitrocellulose
USE **cellulose nitrate**

nitrofluoramines
GS amines
. fluoramines
. . nitrofluoramines
halogen compounds
. fluorine compounds
. . fluoro compounds
. . . fluorine organic compounds
. . . . fluoramines
. . . . . nitrofluoramines
nitrogen compounds
. nitrofluoramines
organic compounds
. fluorine organic compounds
. . fluoramines
. . . nitrofluoramines

nitroformates
GS formates
. nitroformates
nitrogen compounds
. nitroformates

nitroforms
GS esters
. organic nitrates
. . nitroforms
. . . hydrazine nitroform
nitrogen compounds
. nitrates
. . organic nitrates
. . . nitroforms
. . . . hydrazine nitroform

nitrogen
GS chemical elements
. nitrogen
. . liquid nitrogen
. . nitrogen isotopes
. . . nitrogen 15
. . . nitrogen 16
. . solid nitrogen
gases
. nitrogen
. . liquid nitrogen
. . nitrogen isotopes
. . . nitrogen 15
. . . nitrogen 16
. . solid nitrogen
RT Kjeldahl method
nitrogen atoms
nitrogen ions
nitrogen lasers
nitrogenation
nitrolysis
reaction bonding

sialon
Vegard–Kaplan bands
Wolf–Rayet stars

nitrogen 15
GS chemical elements
. nitrogen
. . nitrogen isotopes
. . . **nitrogen 15**
. nuclides
. . isotopes
. . . nitrogen isotopes
. . . . **nitrogen 15**
gases
. nitrogen
. . nitrogen isotopes
. . . **nitrogen 15**

nitrogen 16
GS chemical elements
. nitrogen
. . nitrogen isotopes
. . . **nitrogen 16**
. nuclides
. . isotopes
. . . nitrogen isotopes
. . . . **nitrogen 16**
. . . radioactive isotopes
. . . . **nitrogen 16**
gases
. nitrogen
. . nitrogen isotopes
. . . **nitrogen 16**

nitrogen atoms
GS atoms
. **nitrogen atoms**
RT nitrogen

nitrogen compounds
GS **nitrogen compounds**
. alkaloids
. . atropine
. . betaines
. . caffeine
. . colchicine
. . ergotamine
. . hyoscine
. . lysergine
. . morphine
. . nicotinamide
. . nicotine
. . pilocarpine
. . reserpine
. . strychnine
. . tropyl compounds
. amides
. . acetanilide
. . acetazolamide
. . carbamides
. . cyanamides
. . formhydroxamic acid
. . nicotinamide
. . oxamic acids
. . polyimides
. . . bismaleimide
. . . Kapton (trademark)
. . succinimides
. . ureas
. . . difluorourea
. . . thioureas
. . . thuronium
. ammonia
. . liquid ammonia
. azides (inorganic)
. . hydrogen azides
. . sodium azides
. azides (organic)
. . sodium azides
. . triaminoguanidinium azide
. azo compounds
. . HMX
. . RDX
. cyano compounds
. . cyanamides
. . cyanoacetylene
. . isocyanates
. . . diisocyanates
. . . fulminates
. folic acid
. hydrazinium compounds
. hydrazoic acid
. hydrazones
. hydrocyanic acid
. imides
. . bismaleimide
. . succinimides
. imines
. nitrate esters
. . isopropyl nitrate
. . propyl nitrate
. nitrates
. . dinitrates
. . inorganic nitrates
. . . ammonium nitrates
. . . hydrazine nitrate
. . . potassium nitrates
. . . silver nitrates
. . . sodium nitrates
. . methyl nitrate
. . organic nitrates
. . . cellulose nitrate
. . . nitroforms
. . . . hydrazine nitroform
. . . nitroglycerin
. . . PETN
. nitric acid
. nitrides
. . boron nitrides
. . metal nitrides
. . . aluminum nitrides
. . . beryllium nitrides
. . . gallium nitrides
. . . tantalum nitrides
. . . titanium nitrides
. . . zirconium nitrides
. . oxynitrides
. . silicon nitrides
. nitriles
. nitro compounds
. . nitrobenzenes
. . . trinitrotoluene
. . nitroglycerin
. . nitroguanidine
. . nitromethane
. . nitropropane
. . picrates
. . . ammonium picrates
. . polybutadiene tetranitramine
. . tetryl
. . trinitro compounds
. nitrosamines
. nitrofluoramines
. nitroformates
. nitrogen fluorides
. nitrogen hydrides
. . amino radical
. nitrogen oxides
. . nitric oxide
. . nitrogen dioxide
. . nitrogen tetroxide
. . nitrous oxides
. nitrogen polymers
. nitrosamine
. nitroso compounds
. . nitrosyls
. . . nitrosyl chlorides
. nitroxychlorides
. nitryl chlorides
. nitryl fluorides
. phosphonitriles
. quinoline
. thiazine (trademark)
. thymine
. trinitramine
. tryptophan
. uracil
. xanthines
. . caffeine
. . guanines
. . uric acid
RT chemical compounds
cyanides
Group 5A compounds
phosphazene

nitrogen dioxide
GS chalcogenides
. oxides
. . nitrogen oxides
. . . **nitrogen dioxide**
nitrogen compounds
. nitrogen oxides
. . **nitrogen dioxide**

nitrogen fixation
USE **nitrogenation**

nitrogen fluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . **nitrogen fluorides**
. halides
. . fluorides
. . . **nitrogen fluorides**
nitrogen compounds
. **nitrogen fluorides**

nitrogen hydrides
GS hydrogen compounds
. hydrides
. . **nitrogen hydrides**
. . . amino radical
nitrogen compounds
. **nitrogen hydrides**
. . amino radical
RT ammonia
hydrazoic acid

nitrogen ions
GS ions
. **nitrogen ions**
RT negative ions
nitrogen

nitrogen isotopes
GS chemical elements
. nitrogen
. . **nitrogen isotopes**
. . . nitrogen 15
. . . nitrogen 16
. nuclides
. . isotopes
. . . **nitrogen isotopes**
. . . . nitrogen 15
. . . . nitrogen 16
gases
. nitrogen
. . **nitrogen isotopes**
. . . nitrogen 15

. . . nitrogen 16

nitrogen lasers
DEF Stimulated emission devices in which the nitrogen molecule is the lasing medium.
GS **stimulated emission devices**
. **lasers**
. . **gas lasers**
. . . **nitrogen lasers**
RT lasing
nitrogen
population inversion
pulsed lasers
ultraviolet lasers

nitrogen metabolism
GS metabolism
. **nitrogen metabolism**
RT biochemistry
∞ biology
enzymology
hydrogen metabolism
nutrition

nitrogen oxides
GS chalcogenides
. oxides
. . **nitrogen oxides**
. . . nitric oxide
. . . nitrogen dioxide
. . . nitrogen tetroxide
. . . nitrous oxides
nitrogen compounds
. **nitrogen oxides**
. . nitric oxide
. . nitrogen dioxide
. . nitrogen tetroxide
. . nitrous oxides
RT nitrosyls
nitrous acid
photochemical oxidants

nitrogen plasma
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **nitrogen plasma**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **nitrogen plasma**

nitrogen polymers
GS nitrogen compounds
. **nitrogen polymers**
RT ∞ polymers

nitrogen tetroxide
GS chalcogenides
. oxides
. . nitrogen oxides
. . . **nitrogen tetroxide**
nitrogen compounds
. nitrogen oxides
. . **nitrogen tetroxide**
RT liquid rocket propellants
rocket oxidizers

nitrogenation
UF *nitrogen fixation*
GS chemical reactions
. **nitrogenation**
RT leguminous plants
lightning
nitrogen

nitroglycerin
GS **esters**
. organic nitrates
. . **nitroglycerin**
nitrogen compounds
. nitrates
. . organic nitrates
. . . **nitroglycerin**
. nitro compounds
. . **nitroglycerin**
RT double base propellants
double base rocket propellants
dynamite
explosives
glycerides
glycerols

nitroguanidine
UF *HBNO*
GS nitrogen compounds
. nitro compounds
. . **nitroguanidine**
RT explosives
solid propellants

nitrolysis
GS chemical reactions
. **nitrolysis**
decomposition
. **nitrolysis**
RT cracking (chemical engineering)
nitrogen

nitromethane
GS nitrogen compounds
. nitro compounds
. . **nitromethane**
RT BSX
explosives

nitronium compounds
GS **nitronium compounds**
. nitronium perchlorate
RT ∞ chemical compounds

nitronium perchlorate
GS halogen compounds
. chlorine compounds
. . perchlorates
. . . **nitronium perchlorate**
nitronium compounds
. **nitronium perchlorate**
RT rocket oxidizers

nitropropane
GS nitrogen compounds
. nitro compounds
. . **nitropropane**
organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . **nitropropane**
RT propane

nitrosamine
GS amines
. **nitrosamine**
nitrogen compounds
. **nitrosamine**

nitroso compounds
GS nitrogen compounds
. **nitroso compounds**
. . nitrosyls
. . . nitrosyl chlorides
RT ∞ chemical compounds
organic compounds

nitrosyl chlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . **nitrosyl chlorides**
. halides
. . chlorides
. . . **nitrosyl chlorides**
. nitrosyls
. . **nitrosyl chlorides**
nitrogen compounds
. nitroso compounds
. . nitrosyls
. . . **nitrosyl chlorides**

nitrosyls
GS halogen compounds
. **nitrosyls**
. . nitrosyl chlorides
nitrogen compounds
. nitroso compounds
. . **nitrosyls**
. . . nitrosyl chlorides
RT amines
esters
halides
nitric oxide
nitrogen oxides

nitrous acid
RT air pollution
atmospheric chemistry
nitric acid
nitrogen oxides
reaction kinetics

nitrous oxides
GS chalcogenides
. oxides
. . nitrogen oxides
. . . **nitrous oxides**
nitrogen compounds
. nitrogen oxides
. . **nitrous oxides**

nitroxychlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . **nitroxychlorides**
. halides
. . chlorides
. . . **nitroxychlorides**
nitrogen compounds
. **nitroxychlorides**

nitryl chlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . **nitryl chlorides**
. halides
. . chlorides
. . . **nitryl chlorides**
nitrogen compounds
. **nitryl chlorides**

nitryl fluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . **nitryl fluorides**
. halides
. . fluorides
. . . **nitryl fluorides**
nitrogen compounds
. **nitryl fluorides**

NMR
USE **nuclear magnetic resonance**

NOAA E
USE **NOAA 8 satellite**

NOAA satellites
GS artificial satellites
. meteorological satellites
. . **NOAA satellites**
. . . NOAA 2 satellite
. . . NOAA 3 satellite
. . . NOAA 4 satellite
. . . NOAA 5 satellite
. . . NOAA 6 satellite
. . . NOAA 7 satellite
. . . NOAA 8 satellite
. . . NOAA 9 satellite
. . . NOAA 10 satellite
. . . NOAA 11 satellite
. . . NOAA 12 satellite
. . . NOAA 14 satellite
RT Advanced Microwave Sounding Unit
SMS 1
SMS 2

NOAA 2 satellite
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 2 satellite**

NOAA 3 satellite
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 3 satellite**

NOAA 4 satellite
DEF One of a series of meteorological satellites launched by NASA for the National Oceanic and Atmospheric Administration.
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 4 satellite**

NOAA 5 satellite
DEF One of a series of environmental satellites launched by NASA for the National Oceanic and Atmospheric Administration for the sensing and recording of atmospheric, hydrological, and oceanographic environmental data.
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 5 satellite**

NOAA 6 satellite
DEF Designation for a NOAA meteorological satellite conforming to the TIROS N configuration.
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 6 satellite**
. . TIROS satellites
. . . TIROS N series satellites
. . . . **NOAA 6 satellite**
RT Advanced Very High Resolution Radiometer

NOAA 7 satellite
DEF Designation for the seventh NOAA meteorological satellite conforming to the TIROS N configuration.
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 7 satellite**
RT Advanced Very High Resolution Radiometer
TIROS N series satellites

NOAA 8 satellite
UF *NOAA E*
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 8 satellite**
RT Advanced Very High Resolution Radiometer
SarSat

NOAA 9 satellite
(added July 1990)
UF *NOAA F satellite*
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 9 satellite**

NOAA F satellite
USE **NOAA 9 satellite**

NOAA G satellite
USE **NOAA 10 satellite**

NOAA 10 satellite
(added July 1990)
UF *NOAA G satellite*
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 10 satellite**

NOAA 11 satellite
(added May 1997)
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 11 satellite**
RT Advanced Very High Resolution Radiometer
Solar Backscatter UV Spectrometer

NOAA 12 satellite
(added May 1997)
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 12 satellite**
RT Advanced Very High Resolution Radiometer
microwave sounding

NOAA 14 satellite
(added May 1997)
GS artificial satellites
. meteorological satellites
. . NOAA satellites
. . . **NOAA 14 satellite**
RT Solar Backscatter UV Spectrometer

nobelium
GS chemical elements
. actinide series
. . transuranium elements
. . . **nobelium**
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . **nobelium**
metals
. actinide series
. . transuranium elements
. . . **nobelium**
RT nobelium isotopes

nobelium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **nobelium isotopes**
RT nobelium

noble gases
USE **rare gases**

noble metals
UF *precious metals*
GS metals
. **noble metals**
. . gold
. . . gold isotopes
. . . . gold 198
. . ruthenium
. . . ruthenium isotopes
. . silver
. . . silver isotopes
RT Group 1B compounds

noctilucence
USE **luminescence**

noctilucent clouds
DEF Clouds of unknown composition which occur at great heights, 75 to 90 kilometers. They resemble thin cirrus clouds, but usually with a bluish or silverish color, although sometimes orange to red, standing out against a dark night sky. Sometimes called luminous clouds.
GS clouds (meteorology)
. **noctilucent clouds**
RT luminescence

nocturnal variations
GS variations
. magnetic variations
. . **nocturnal variations**
. periodic variations
. . **nocturnal variations**
RT diurnal variations
geomagnetic micropulsations
geomagnetic pulsations

nodes (standing waves)
DEF Points, lines, or surfaces in standing waves where some characteristic of the wave field has essentially zero amplitude.
RT antinodes
harmonics
resonant frequencies
standing waves
vibration
wavelengths
∞ waves

nodules
RT leguminous plants
particles
spheres
spherulites

NOE navigation
USE **nap-of-the-earth navigation**

NOESS
SN (NATIONAL OPERATIONAL ENVIRONMENTAL SATELLITE SYSTEM)
DEF The acronym for the National Operational Environmental Satellite System. This

term is no longer in use. Used for National Operational Environmental Sat Sys.
UF *National Operational Environmental Sat Sys*
RT meteorological satellites
meteorology
NASA programs
observation
∞ systems

∞ **noise**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Any undesired signal (electrical or acoustic) that tends to interfere with the reception, interpretation, or processing of the desired signal.
RT background noise
continuous noise
effective perceived noise levels
electromagnetic noise
hum
information theory
noise (sound)
noise injuries
noise propagation
noise spectra
random noise
signal to noise ratios
spatial filtering
white noise

noise (sound)
UF *noise hazards*
GS elastic waves
. sound waves
. . noise (sound)
. . . aerodynamic noise
. . . . blade slap noise
. . . . propeller noise
. . . aircraft noise
. . . . blade slap noise
. . . . jet aircraft noise
. . . . propeller noise
. . . . sonic booms
. . . engine noise
. . . . rocket engine noise
. . . thermal noise
RT acoustics
aeolian tones
aircraft hazards
ambience
auditory stimuli
auditory tasks
background noise
echoes
effective perceived noise levels
flight hazards
human factors engineering
hypersonic shock
jet blast effects
loudness
mufflers
∞ noise
noise measurement
noise spectra
operational hazards
random noise
random vibration
reverberation
shock waves
sound pressure
underwater acoustics
white noise

noise attenuation
USE **noise reduction**

noise elimination
USE **noise reduction**

noise generators
RT electromagnetic noise
∞ generators
radio frequency interference
random noise
sound generators
sound propagation

noise hazards
USE **hazards**
noise (sound)

noise injuries
GS injuries
. **noise injuries**
RT ear protectors
∞ noise

noise intensity
RT aircraft noise
auditory stimuli
effective perceived noise levels
electromagnetic noise
∞ intensity
propeller noise
psychoacoustics
sirens
sound intensity

noise measurement
GS acoustic measurement
. **noise measurement**
RT aerodynamic noise
aircraft noise
background noise
jet aircraft noise
loudness
∞ measurement
noise (sound)
propeller noise
sound intensity

noise meters
SN (LIMITED TO ACOUSTIC NOISE)
GS measuring instruments
. **noise meters**
RT acoustic measurement
field intensity meters
pressure measurement

noise pollution
DEF Objectional or harmful levels of noise.
GS pollution
. **noise pollution**
RT acoustics
audio frequencies
environment effects
environment pollution
environmental quality
human reactions
human tolerances
physiological effects
physiological factors
sound waves

noise prediction
DEF Estimation of intensity and frequencies based on analyses of probable oscillation of vibration producing components.
GS predictions
. **noise prediction**
. . noise prediction (aircraft)

noise prediction (aircraft)
DEF Estimating or forecasting of aircraft noise. Used for aircraft noise prediction.
UF *aircraft noise prediction*
GS predictions
. noise prediction
. . **noise prediction (aircraft)**
RT aeroacoustics
∞ aircraft
aircraft noise
estimates
forecasting
propeller noise
sound waves

noise propagation
RT acoustics
coherence coefficient
continuous noise
far fields
∞ noise
signal to noise ratios
sound propagation

noise reduction
UF *noise attenuation*
noise elimination
noise suppressors
RT acoustic attenuation
acoustic ducts
acoustic retrofitting
acoustics
aerodynamic noise
aircraft noise
coaxial nozzles
ear protectors
echo suppressors
effective perceived noise levels
electrical grounding
electromagnetic interference
electromagnetic noise
flight rules
grazing flow
Helmholtz resonators
interference immunity
isolators
jet aircraft noise
loudness
mufflers
propeller noise
quiet engine program
∞ reduction
shock wave attenuation
silence
squelch circuits
suppressors
synchrophasing
vibration isolators

noise spectra
GS spectra
. **noise spectra**
RT acoustic frequencies
background noise
channel noise
electromagnetic compatibility
electromagnetic noise
electromagnetic spectra
∞ noise
noise (sound)
radiation spectra
random noise
random signals
shock spectra
signal to noise ratios
white noise

noise storms
GS storms
. **noise storms**
RT cosmic noise
electromagnetic noise
ionospheric storms
magnetic storms
radio frequency interference
solar storms

noise suppressors
USE **noise reduction**

noise temperature
GS temperature
. **noise temperature**
RT electromagnetic noise
electron energy
electron states
temperature measurement
thermal noise

noise threshold
RT auditory fatigue
auditory perception
background noise
signal to noise ratios
∞ thresholds

noise tolerance
RT hazards
human tolerances
tolerances (physiology)

Nomad launch vehicle
GS launch vehicles
. **Nomad launch vehicle**
rocket vehicles
. single stage rocket vehicles
. . **Nomad launch vehicle**
RT Atlas launch vehicles
liquid propellant rocket engines

nomenclatures
RT definition
descriptions
dictionaries
mnemonics
naming
semantics
symbols
terminology
thesauri

nominal values
USE **approximation**

nomograms
USE **nomographs**

nomographs
DEF On charts or graphs, lines of constant value of given quantities with respect to either space or time. Used for isopleths and nomograms.
UF *isopleths*
nomograms
GS analysis (mathematics)
. numerical analysis
. . **nomographs**
RT charts
graphs (charts)

non-intrusive measurement
USE **nonintrusive measurement**

nonadiabatic conditions
DEF In thermodynamics, changes in volume, temperature, flow, etc., accompanied by a transfer of heat.
GS conditions
. **nonadiabatic conditions**
RT energy transfer
heat transfer
nonisothermal processes
thermodynamics

nonadiabatic processes
USE **heat transfer**

nonadiabatic theory
RT adiabatic equations
charged particles
energy dissipation
ionization cross sections
magnetic disturbances
∞ theories
wave propagation

nonanes
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . **nonanes**

nonaqueous electrolytes
GS conductors
. electrolytes
. . **nonaqueous electrolytes**
RT electric batteries
∞ electric cells
electrochemistry
electrolytic cells
primary batteries
storage batteries
wet cells

noncondensable gases
GS gases
. **noncondensable gases**
RT critical temperature
gas–liquid interactions
liquefaction

nonconductors
USE **electrical insulation**

nonconservative forces
RT conservation
conservation equations
conservation laws
continuity equation
∞ force

nondestructive tests
DEF Testing that does not alter the material under test in a permanent manner or introduce any permanent changes to the material properties and structure.
UF *flaw detection*
GS **nondestructive tests**
. neutron radiography
RT acoustic emission
acoustic imaging
adhesion tests
chemical tests
destructive tests
electronic equipment tests
engine tests
ground penetrating radar
hardness tests
high temperature tests
infrared inspection
inspection
load tests
low temperature tests
∞ materials tests
nonintrusive measurement
photoacoustic microscopy
quality control
radiography
reliability
SH waves
shearography
static tests
∞ tests
thermography
tolerances (mechanics)
ultrasonic flaw detection
ultrasonic spectroscopy
ultrasonic tests
x ray inspection

nonelectrolytes
RT electrolytes

nonequilibrium conditions
GS conditions
. **nonequilibrium conditions**
RT ∞ equilibrium
unsteady state

nonequilibrium drag
USE **friction drag**

nonequilibrium flow
GS fluid flow
. gas flow
. . **nonequilibrium flow**
RT equilibrium flow
∞ fluids
heat transmission
oscillating flow
quasi-steady states
unsteady flow

nonequilibrium ionization
GS ionization
. **nonequilibrium ionization**

nonequilibrium plasmas
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **nonequilibrium plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **nonequilibrium plasmas**
RT magnetohydrodynamic stability
nonuniform plasmas
plasma composition
plasma potentials
plasma radiation
plasma sheaths
rotating plasmas

nonequilibrium radiation
GS electromagnetic radiation
. **nonequilibrium radiation**
RT nonthermal radiation
shock wave propagation

nonequilibrium thermodynamics
GS thermodynamics
. **nonequilibrium thermodynamics**
RT irreversible processes

nonEuclidian geometry
USE **differential geometry**

nonferrous metals
GS metals
. **nonferrous metals**
RT chemical elements
conductors
∞ metallurgy

nonflammable materials
RT asbestos
fireproofing
∞ inorganic materials
Kevlar (trademark)
∞ materials
oxides
refractory materials

nongray atmospheres
RT ∞ atmospheres
black body radiation
emissivity
gray gas
planetary atmospheres

nongray gas
GS gases
. **nongray gas**
RT ∞ atmospheres
black body radiation
emissivity
heat transfer
spectral emission
thermal radiation
thermodynamics

nonholonomic equations
GS analysis (mathematics)
. complex variables
. . **nonholonomic equations**
RT analytic functions
∞ equations

nonhomogeneity
USE **inhomogeneity**

nonintrusive measurement
(added September 1992)
UF *non-intrusive measurement*
RT flow measurement
laser doppler velocimeters
∞ measurement
nondestructive tests
optical measurement
temperature measurement

nonisentropicity
GS isentropic processes
. **nonisentropicity**
RT entropy
∞ processes

nonisothermal processes
DEF In thermodynamics, compression or expansion of substances at nonuniform temperatures.
RT energy transfer
heat transfer
nonadiabatic conditions
pressure effects
∞ processes
temperature gradients
thermodynamics

nonisotropic plates
USE **anisotropic plates**

nonisotropy
USE **anisotropy**

nonlifting vehicles
USE **ballistic vehicles**

nonlinear equations
GS algebra
. **nonlinear equations**
. . cubic equations
. . Duffing differential equation
. . Monge–Ampere equation
. . nonlinear evolution equations
. . quadratic equations
. . quartic equations
analysis (mathematics)
. real variables
. . **nonlinear equations**
. . . cubic equations
. . . Duffing differential equation
. . . Monge–Ampere equation
. . . nonlinear evolution equations
. . . quadratic equations
. . . quartic equations
RT Born–Infeld theory
differential equations
∞ equations
field theory (algebra)
integral equations
polynomials
roots of equations

nonlinear evolution equations
GS algebra
. nonlinear equations
. . **nonlinear evolution equations**
analysis (mathematics)
. real variables
. . nonlinear equations
. . . **nonlinear evolution equations**
RT difference equations
∞ equations

nonlinear feedback
GS feedback
. **nonlinear feedback**
RT feedback amplifiers
feedback control
negative feedback
positive feedback
sensory feedback
transfer functions

nonlinear filters
RT electric filters
electromagnetic wave filters
∞ filters
linear filters

nonlinear optics
DEF Study of the interaction of radiation with matter in which certain variables describing the response of the matter are not proportional to variables describing the radiation.
RT birefringence
chromophores
electromagnetic radiation
electro–optical effect
four–wave mixing
geometrical optics
gradient index optics
optical bistability
∞ optics
quantum dots
quantum optics
quantum wires
Raman spectra
Sagnac effect

nonlinear programming
DEF An optimization problem in which any or all of the following are nonlinear in the variables: (A) the objective functions, (B) the the defining relationships among the variabes, the plant description, (C) the constraints.
GS optimization
. mathematical programming
. . **nonlinear programming**
research
. **nonlinear programming**
RT ∞ applications of mathematics
constraints
formalism
linear programming
operations research
∞ programming

nonlinear systems
SN (DYNAMIC SYSTEMS HAVING NONLINEAR RESPONSES)
RT attractors (mathematics)
chaos
control equipment
distributed parameter systems
dynamic programming
dynamical systems
linear systems
strange attractors
∞ systems
tracking problem

nonlinearity
UF *quasilinearity*
RT differential equations
functions (mathematics)
linearity
magnetic amplifiers
variability
Volterra equations

nonNewtonian flow
DEF The rate of flow of a material that is not proportional to the degree of force applied.
GS fluid flow
. **nonNewtonian flow**
RT liquid flow
steady flow
thixotropy
unsteady flow
viscoelasticity
viscoplasticity

nonNewtonian fluids
DEF Fluids that exhibit a viscosity which varies with changing shear stress or shear rate.
RT colloids
∞ fluids
gelatins
gels
newton
Newton Theory
Newtonian fluids
rheology
viscoelasticity
viscoplasticity
viscous fluids

nonohmic effect
RT barrier layers
contact resistance
∞ effects
space charge

nonoscillatory action
GS oscillations
. **nonoscillatory action**
RT oscillation dampers
oscillators
vibration damping

nonparametric statistics
GS statistical analysis

. **nonparametric statistics**
RT ∞ statistics

nonpoint sources
DEF Undetermined or general areas from which pollutants, contaminants, and/or other unwanted materials or wastes enter the environment.
RT contaminants
contamination
diffusion
environments
gases
liquids
particles
∞ points
poisons
pollution
public health
radioactive wastes
∞ sources
toxicology
wastes

nonpolar gases
GS gases
. **nonpolar gases**
RT molecular gases
rare gases

nonreflection
USE **energy absorption**

nonrelativistic electrons
USE **electrons**

nonrelativistic mechanics
RT Newton Theory
relativity

nonresonance
RT microwave resonance
transmission lines
traveling waves

nonrigidity
USE **flexibility**

nonspherical optics
USE **aspheric optics**

nonstabilized oscillation
GS oscillations
. **nonstabilized oscillation**
RT oscillation dampers
oscillators
pilot induced oscillation
stable oscillations
vibration damping

nonsynchronization
RT deviation
incoherence
∞ interference
nonuniformity

nonthermal emission
USE **nonthermal radiation**

nonthermal radiation
UF *nonthermal emission*
GS electromagnetic radiation
. **nonthermal radiation**
. . cyclotron radiation
. . . ion cyclotron radiation
. . synchrotron radiation
RT galactic radiation
magnetic fields
nonequilibrium radiation
∞ radiation
radio waves
thermal radiation

nonuniform flow
GS fluid flow
. **nonuniform flow**
RT flow characteristics
gas flow
turbulent flow
uniform flow
unsteady flow

nonuniform magnetic fields
GS magnetic fields
. **nonuniform magnetic fields**
RT diffraction radiation
lines of force
magnetic anomalies
magnetic mirrors

nonuniform plasmas
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **nonuniform plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **nonuniform plasmas**
RT Kelvin-Helmholtz instability
low density research
magnetohydrodynamic stability
nonequilibrium plasmas
plasma composition
plasma oscillations
plasma waves
rarefied plasmas

nonuniformity
RT flexibility
inhomogeneity
irregularities
nonsynchronization
oscillations
turbulence

nonviscous flow
USE **inviscid flow**

noon
DEF The instant at which a time reference is over the upper branch of the reference meridian.
RT daytime
zenith

noradrenaline
GS drugs
. stimulants
. . **noradrenaline**
RT norepinephrine

Nord 1500 aircraft
UF *Griffon aircraft*
GS jet aircraft
. **Nord 1500 aircraft**
monoplanes
. **Nord 1500 aircraft**
Nord aircraft
. **Nord 1500 aircraft**
research vehicles
. research aircraft
. . **Nord 1500 aircraft**
supersonic aircraft
. **Nord 1500 aircraft**
RT ∞ aircraft

Nord 262 aircraft
USE **MH-262 aircraft**

Nord aircraft
GS **Nord aircraft**
. C-160 aircraft
. MH-262 aircraft
. Nord 1500 aircraft
RT ∞ aircraft

norepinephrine
GS amines
. catecholamine
. . epinephrine
. . . **norepinephrine**
drugs
. epinephrine
. . **norepinephrine**
. stimulants
. . **norepinephrine**
RT dopamine
noradrenaline

norleucine
GS acids
. amino acids
. . leucine
. . . **norleucine**
organic compounds
. amino acids
. . leucine
. . . **norleucine**

normal density functions
UF *Gaussian distributions*
normal distributions
GS functions (mathematics)
. probability density functions
. . **normal density functions**
statistical analysis
. probability density functions
. . **normal density functions**
RT continuity (mathematics)
discrete functions
histograms

normal distributions
USE **normal density functions**

normal force distribution
USE **force distribution**

normal shock waves
GS elastic waves
. shock waves
. . **normal shock waves**
RT longitudinal waves
magnetohydrodynamic waves
oblique shock waves
plane waves
shock layers

normality
RT asymptotic properties
average
mean
median (statistics)
norms
statistical tests

∞ **normalizing**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT normalizing (heat treatment)
normalizing (statistics)
regularity

normalizing (heat treatment)
GS heat treatment
. **normalizing (heat treatment)**
RT annealing
hardening (materials)

laser annealing
∞ normalizing
tempering

normalizing (statistics)
RT evaluation
∞ normalizing
quality control
ratings
renormalization group methods

norms
GS naming
. norms
RT average
ethics
median (statistics)
normality
psychometrics
value

North America
GS continents
. North America
RT Appalachian Mountains (North America)
Canada
Central America
Lower California (Mexico)
Mexico
tundra
United States
Williston Basin (North America)

North American aircraft
GS North American aircraft
. A-2 aircraft
. A-5 aircraft
. B-1 aircraft
. B-70 aircraft
. F-86 aircraft
. F-100 aircraft
. OV-10 aircraft
. P-51 aircraft
. T-2 aircraft
. T-28 aircraft
. T-39 aircraft
. X-15 aircraft
RT∞ aircraft

North Atlantic Treaty Organization (NATO)
GS organizations
. North Atlantic Treaty Organization (NATO)
RT international cooperation

North Carolina
GS nations
. United States
. . North Carolina
RT Cape Hatteras (NC)
Great Smoky Mountains (NC–TN)
Outer Banks (NC)
Sand Hills Region (GA–NC–SC)

North Dakota
GS nations
. United States
. . North Dakota
RT Missouri River (US)
Williston Basin (North America)

North Korea
UF *Democratic Peoples Republic of Korea*
GS nations
. North Korea
RT Asia
∞ Korea
South Korea

North Polar Spur (astronomy)
DEF One of the largest sources of diffuse radio emission outside the galactic plane. The Spur, a ridge of enhanced emission, may be the remnant of the shells of supernovae which exploded over 100,000 years ago.
GS electromagnetic radiation
. radio waves
. . extraterrestrial radio waves
. . . galactic radio waves
. . . . North Polar Spur (astronomy)
extraterrestrial radiation
. extraterrestrial radio waves
. . galactic radio waves
. . . North Polar Spur (astronomy)
. galactic radiation
. . galactic radio waves
. . . North Polar Spur (astronomy)
RT nebulae
supernova remnants
x ray spectra

North Sea
GS seas
. North Sea
RT English Channel

North Vietnam
USE **Vietnam**

Northern Hemisphere
GS Northern Hemisphere
. Arctic regions
. . subarctic regions
RT∞ hemispheres
northern sky
Southern Hemisphere

Northern Ireland
(added November 1989)
GS nations
. . United Kingdom
. . Northern Ireland
RT Europe

northern sky
DEF That part of the sky visible from the northern hemisphere.
RT astronomical catalogs
astronomical coordinates
astronomical observatories
Northern Hemisphere
sky surveys (astronomy)
Southern sky

Northrop aircraft
GS Northrop aircraft
. A-9 aircraft
. F-5 aircraft
. F-18 aircraft
. F-20 aircraft
. F-89 aircraft
. T-38 aircraft
. X-21 aircraft
. X-21A aircraft
RT∞ aircraft

Northwest Territories
GS nations
. Canada
. . Northwest Territories

Norton County achondrite
GS celestial bodies
. meteorites
. . stony meteorites
. . . achondrites
. . . . Norton County achondrite

Norway
GS nations
. Norway
RT Europe
fiords
Norwegian space program
Scandinavia

Norwegian space program
(added August 1990)
GS programs
. space programs
. . European space programs
. . . Norwegian space program
RT Norway

∞ **nose**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT nose (anatomy)
noses (forebodies)

nose (anatomy)
GS anatomy
. face (anatomy)
. . nose (anatomy)
. respiratory system
. . nose (anatomy)
RT head (anatomy)
∞ nose
paranasal sinuses
sinuses

nose caps
USE **nose cones**

nose cones
DEF The cone shaped leading ends of rocket vehicles, consisting (a) of chambers in which satellites, instruments, animals, plants, or auxiliary equipment may be carried, and (b) of outer surfaces built to withstand high temperatures generated by aerodynamic heating. Used for nose caps.
UF *nose caps*
GS cones
. nose cones
. . ablative nose cones
. . rocket nose cones
forebodies
. noses (forebodies)
. . nose cones
. . . ablative nose cones
. . . rocket nose cones
RT ablative materials
blunt bodies
∞ caps
circular cones
half cones
missile components
ogives
reentry shielding
reentry vehicles
spacecraft components
spacecraft shielding
spherical caps
warheads

nose fins
GS fins
. nose fins
RT control surfaces
finned bodies
noses (forebodies)
vanes

nose inlets
GS intake systems

. . **nose inlets**
RT air intakes
annular ducts
bypass ratio
ducted bodies
ducts
hypersonic inlets
inlet airframe configurations
nacelles
noses (forebodies)
scoops
side inlets
supersonic inlets
∞ water intakes

nose tips
DEF The foremost, sharp points of bombs, rockets, missiles, and other symmetrical bodies.
GS tips
. **nose tips**
RT aerodynamic configurations
airfoil profiles
noses (forebodies)

nose wheels
GS wheels
. vehicle wheels
. . **nose wheels**
RT brakes (for arresting motion)
landing gear

noses (forebodies)
GS forebodies
. **noses (forebodies)**
. . nose cones
. . . ablative nose cones
. . . rocket nose cones
RT aircraft structures
∞ nose
nose fins
nose inlets
nose tips

Nostoc
GS plants (botany)
. algae
. . blue green algae
. . . **Nostoc**
. thermophilic plants
. . blue green algae
. . . **Nostoc**

notation
USE **coding**

notch sensitivity
GS mechanical properties
. toughness
. . **notch sensitivity**
sensitivity
. **notch sensitivity**
RT Charpy impact test
fatigue (materials)
impact strength
impact tests

notch strength
GS mechanical properties
. **notch strength**
RT brittleness
ductility
fatigue tests
impact tests
∞ strength
stress concentration
stress intensity factors

notch tests
UF *notched metals*
GS **notch tests**
. Charpy impact test
RT brittleness
crack opening displacement
drop tests
fatigue tests
hardness
impact tests
stress concentration
∞ tests

notched metals
USE **notch tests**

notches
RT crack opening displacement
passageways
V grooves

Nova computers
DEF A series of minicomputers built by Data General.
GS data processing equipment
. computers
. . digital computers
. . . minicomputers
. . . . **Nova computers**

Nova Laser System
DEF Laser fusion system utilizing large neodymium glass lasers for irradiating DT pellets.
GS stimulated emission devices
. lasers
. . high power lasers
. . . **Nova Laser System**
RT laser fusion
laser outputs
Shiva laser system
∞ systems

Nova launch vehicles
GS launch vehicles
. **Nova launch vehicles**
rocket vehicles
. multistage rocket vehicles
. . **Nova launch vehicles**
RT F-1 rocket engine
J-2 engine
liquid propellant rocket engines
M-1 engine
∞ vehicles

Nova satellites
DEF A second generation Navy navigation satellite which replaces the transit satellites.
GS artificial satellites
. navigation satellites
. . **Nova satellites**
RT Discos (satellite attitude control)
Transit navigation system

Nova Scotia
GS nations
. Canada
. . **Nova Scotia**

novae
GS celestial bodies
. stars
. . variable stars
. . . **novae**
. . . . dwarf novae
. . . . Hercules nova
RT cataclysmic variables
shock waves
stellar mass
stellar mass ejection
supernovae
symbiotic stars

novocain
GS drugs
. anesthetics
. . **novocain**

nowcasting
DEF A self contained short period meteorological forecast for the immediate future covering a period of up to six hours.
GS forecasting
. weather forecasting
. . **nowcasting**
meteorology
. weather forecasting
. . **nowcasting**
RT aviation meteorology

noxious materials
USE **contaminants**

nozzle coefficient
USE **nozzle flow**

nozzle design
RT aerospike engines
∞ design
engine design
∞ nozzles

nozzle efficiency
DEF The efficiency with which a nozzle converts potential energy into kinetic energy, commonly expressed as the ratio of the actual change in kinetic energy to the ideal change at the given pressure ratio.
GS efficiency
. **nozzle efficiency**
RT ∞ nozzles
power efficiency
propulsive efficiency
thermodynamic efficiency

nozzle flow
UF *nozzle coefficient*
GS fluid flow
. internal flow
. . **nozzle flow**
RT aerothermochemistry
annular flow
choked flow
corner flow
discharge coefficient
exhaust gases
exhaust nozzles
fissionable materials
flow geometry
fluid injection
injectors
jet flow
outlet flow
pneumatic probes
supersonic jet flow
transonic flow

nozzle geometry
GS geometry
. **nozzle geometry**
RT coaxial nozzles
conical nozzles
convergent nozzles
convergent-divergent nozzles
discharge coefficient
divergent nozzles
mass flow factors
∞ nozzles
pipe nozzles

plug nozzles
shrouded nozzles
spike nozzles
throats

nozzle inserts
GS inserts
. **nozzle inserts**
RT ablative materials
chokes
conical nozzles
convergent–divergent nozzles
exhaust nozzles
∞ nozzles
rocket nozzles
throats

nozzle thrust coefficients
GS coefficients
. **nozzle thrust coefficients**
RT discharge coefficient
flow coefficients
influence coefficient
thrust
thrust vector control

nozzle walls
GS walls
. **nozzle walls**
RT conical nozzles
convergent nozzles
divergent nozzles
jet amplifiers
∞ nozzles
refractory materials
shrouded nozzles
throats

nozzleless rocket engines
GS engines
. rocket engines
. . **nozzleless rocket engines**
RT rocket nozzles

∞ nozzles
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT acoustic nozzles
annular nozzles
atomizers
blowers
chokes
chokes (restrictions)
coaxial nozzles
conical nozzles
convergent nozzles
convergent–divergent nozzles
∞ diffusers
divergent nozzles
dual thrust nozzles
exhaust nozzles
flow measurement
funnels
hypersonic nozzles
injectors
inlet nozzles
nozzle design
nozzle efficiency
nozzle geometry
nozzle inserts
nozzle walls
orifices
outlets
pipe nozzles
plug nozzles
rocket nozzles
shrouded nozzles
sonic nozzles
spike nozzles
spray nozzles
sprayers
supersonic nozzles
transonic nozzles
turbines
vents
wind tunnel nozzles

NRX reactors
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . **NRX reactors**
. nuclear research and test reactors
. . **NRX reactors**
RT KIWI reactors
nuclear engine for rocket vehicles

NTS
USE **navigation technology satellites**

nu factor
RT Poisson ratio

nuclear astrophysics
(added July 1988)
GS astrophysics
. **nuclear astrophysics**
nuclear physics
. **nuclear astrophysics**
RT cosmology
nuclear particles
stellar physics

nuclear auxiliary power units
GS auxiliary power sources
. **nuclear auxiliary power units**
. . SNAP
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 1
. . . SNAP 3
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 11
. . . SNAP 13
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . . SNAP 50
. . space power reactors
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 50
. . . space power unit reactors
nuclear electric power generation
. **nuclear auxiliary power units**
. . SNAP
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 1
. . . SNAP 3
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 11
. . . SNAP 13
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . . SNAP 50
. . space power reactors
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 50
. . . space power unit reactors
RT ∞ power supplies
radioisotope batteries
spacecraft power supplies
thermoelectric generators
thermoelectric power generation

nuclear binding energy
GS binding energy
. **nuclear binding energy**
RT activation energy
∞ energy
gravitational binding energy
ionization potentials

nuclear bulge (galaxies)
USE **galactic bulge**

nuclear capture
GS nuclear reactions
. nuclear interactions
. . **nuclear capture**
. . . electron capture
particle interactions
. elementary particle interactions
. . **nuclear capture**
. . . electron capture
. nuclear interactions
. . **nuclear capture**
. . . electron capture
RT activation energy
capture effect
electron transitions
energy levels
∞ interactions
irradiation
spin
transition probabilities

nuclear chemistry
RT atomic structure
∞ chemistry
isomers
∞ nuclear energy
physical chemistry
plasma chemistry
quantum chemistry
radiochemistry

nuclear deformation
GS deformation
. **nuclear deformation**

nuclear devices
DEF Devices whose explosive potency is derived from nuclear fission of atoms of fissionable material with the consequent conversion of part of their mass into energy.
GS explosive devices

. nuclear devices
RT ∞ devices
fission weapons
thermonuclear explosions
warheads

nuclear electric power generation
UF *nuclear power generation*
GS **nuclear electric power generation**
. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 1
. . . SNAP 3
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 11
. . . SNAP 13
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . . SNAP 50
. . space power reactors
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 50
. . . space power unit reactors
. nuclear power plants
. . Enrico Fermi atomic power plant
. . Hallam Nuclear Power Facility
. . ML-1 nuclear power plant
. nuclear power reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
. . Pathfinder nuclear reactor
. . plutonium recycle test reactor
. . space power reactors
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 50
. . . space power unit reactors
. . Tory 2 reactor
. . Tory 2-A reactor
. . Tory 2-C reactor
. thermonuclear power generation
RT electric generators
∞ nuclear energy

nuclear electric propulsion
GS propulsion
. nuclear propulsion
. . **nuclear electric propulsion**
RT electric propulsion
electrothermal engines
ion propulsion
marine propulsion
plasma propulsion
spacecraft propulsion

nuclear emulsions
DEF Very thick photographic emulsions used in the study of cosmic rays and other energetic particles. The paths of the particles through the thick emulsions are recorded in three dimensions.
GS mixtures
. dispersions
. . emulsions
. . . photographic emulsions
. . . . **nuclear emulsions**
. solutions
. . photographic emulsions
. . . **nuclear emulsions**
RT dosimeters
radiation counters
radiation measuring instruments

∞ **nuclear energy**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF All forms of energy released in the course of a nuclear fission or a nuclear transformation.
UF *atomic energy*
RT annular core pulse reactors
atomic theory
chemical energy
energy policy
energy storage
molecular energy levels
nuclear chemistry
nuclear electric power generation
nuclear fission
nuclear fuels
nuclear fusion
nuclear heat
nuclear physics
nuclear propulsion
nuclear reactors
nuclear research
nuclear warfare
nuclear weapons
nucleonics
spent fuels

nuclear engine for rocket vehicles
UF *NERVA (engine)*
GS **engines**
. rocket engines
. . **nuclear engine for rocket vehicles**
RT booster rocket engines
KIWI reactors
NRX reactors
Phoebus nuclear reactor
Rover project
sustainer rocket engines
∞ vehicles
water cooled reactors

nuclear explosion effect
RT ∞ effects
fallout
radiation effects
radiation hazards

nuclear explosions
UF *atomic explosions*
GS explosions
. **nuclear explosions**
. . thermonuclear explosions
RT aerial explosions
artificial radiation belts
civil defense
cratering
fallout
∞ fireballs
Fishbowl Operation
high energy interactions
radiation hazards
underground explosions
underwater explosions
Vela satellites

nuclear fission
GS nuclear reactions
. **nuclear fission**
RT critical experiments
critical mass
decay
fission products
fusion reactors
fusion-fission hybrid reactors
high energy interactions
neutron flux density
∞ nuclear energy
radioactive decay
radioactive materials
subcritical mass

nuclear fuel burnup
GS combustion
. fuel combustion
. . **nuclear fuel burnup**
RT critical mass
reactor physics
reactor technology

nuclear fuel elements
UF *fuel elements (nuclear reactors)*
RT annular core pulse reactors
∞ elements
fuels
plutonium alloys
reactor cores
reactor materials
uranium alloys
uranium carbides

nuclear fuel reprocessing
DEF Periodic chemical, physical, and metallurgical treatment of materials used as fuel elements in nuclear reactors to recover and purify residual fissionable and fertile materials.
GS reclamation
. materials recovery
. . **nuclear fuel reprocessing**
RT nuclear fuels
∞ processing
∞ recovery
recycling
spent fuels

nuclear fuels
DEF Fissionable materials of reasonable long life, used or usable in producing energy in a nuclear reactor. Used for reactor fuels.
UF *reactor fuels*
GS fuels
. **nuclear fuels**
. . ceramic nuclear fuels
. . fissium
. . spent fuels
RT annular core pulse reactors
deuterium
energy policy
fissile fuels
fission
fissionable materials
fuel capsules
fuel production
inertial fusion (reactor)
mixed oxides
neutron sources
∞ nuclear energy
nuclear fuel reprocessing

pellets
plutonium
plutonium alloys
plutonium compounds
reactor cores
reactor materials
reactor startup tests
sol–gel processes
thorium
thorium alloys
thorium compounds
tritium
uranium
uranium 233
uranium 235
uranium 238
uranium alloys
uranium carbides
uranium compounds
uranium oxides

nuclear fusion
UF *nucleosynthesis*
GS nuclear reactions
. thermonuclear reactions
. . **nuclear fusion**
. . . controlled fusion
RT collisional plasmas
degenerate matter
dense plasmas
deuteron irradiation
∞ fusion
fusion reactors
fusion weapons
fusion–fission hybrid reactors
high energy interactions
irradiation
magnetic mirrors
mirror fusion
∞ nuclear energy
plasma focus
railgun accelerators
star formation
stellar interiors
stellar physics
∞ synthesis
tokamak devices

nuclear gyroscopes
GS gyroscopes
. **nuclear gyroscopes**

nuclear heat
GS heat
. **nuclear heat**
RT ∞ nuclear energy

nuclear interactions
GS nuclear reactions
. **nuclear interactions**
. . nuclear capture
. . . electron capture
. . spin–orbit interactions
. . . electron capture
. . weak interactions (field theory)
particle interactions
. **nuclear interactions**
. . nuclear capture
. . . electron capture
. . spin–orbit interactions
. . . electron capture
. . weak interactions (field theory)
RT collision parameters
elementary particles
high energy interactions
∞ interactions
strong interactions (field theory)

nuclear isobars
RT chemical elements
∞ isobars
isotopes
nuclei (nuclear physics)
nuclides

nuclear lightbulb engines
GS engines
. rocket engines
. . nuclear rocket engines
. . . **nuclear lightbulb engines**
RT gaseous fission reactors

nuclear magnetic resonance
UF *knight shift*
NMR
GS resonance
. magnetic resonance
. . **nuclear magnetic resonance**
. . . proton magnetic resonance
. . . proton resonance
RT magnetic signals
magnetometers
molecular structure
paramagnetic resonance
particle spin
Plancks constant
spin resonance
spin–lattice relaxation

nuclear medicine
DEF That branch of medicine dealing with the effect of radiation such as x rays, gamma rays, and energetic particles on the body and with the prevention and cure of physiological injuries resulting from such radiation. Used for radiation medicine.
UF *radiation medicine*
GS medical science
. **nuclear medicine**
. . radiobiology
RT antiradiation drugs
health physics
∞ radiation
radiopathology

nuclear meteorology
GS meteorology
. **nuclear meteorology**
RT fallout

nuclear models
GS models
. **nuclear models**
RT atomic structure
energy levels
molecular structure
quark parton model

nuclear particles
GS particles
. **nuclear particles**
. . antiparticles
. . . antineutrinos
. . . antinucleons
. . . antiprotons
. . . positrons
. . beta particles
. . bosons
. . . alpha particles
. . . Higgs bosons
. . . mesons
. . . . eta–mesons
. . . . hyperons
. . . . . xi hyperons
. . . . kaons
. . . . meson resonance
. . . . . X mesons
. . . . muons
. . . . omega–mesons
. . . . pions
. . . . vector mesons
. . . . . rho–mesons
. . . . . sigma–mesons
. . . photons
. . . xi hyperons
. . nucleons
. . photoelectrons
RT corpuscular radiation
cosmic rays
elementary particles
fission products
gamma ray bursts
neutron cross sections
neutron distribution
neutron scattering
nuclear astrophysics
nucleon potential
nucleon–nucleon scattering
particle accelerators
particle tracks
photoneutrons
pi–electrons
positron annihilation
proton resonance
protons

nuclear physics
GS **nuclear physics**
. nuclear astrophysics
. reactor physics
RT atomic structure
current algebra
electromagnetic absorption
field theory (physics)
health physics
∞ nuclear energy
nucleonics
parity
particle spin
∞ physics
quantum theory
∞ science
theoretical physics

nuclear potential
GS potential energy
. **nuclear potential**
RT nucleon potential

nuclear power generation
USE **nuclear electric power generation**

nuclear power plants
GS electric power plants
. **nuclear power plants**
. . Enrico Fermi atomic power plant
. . Hallam Nuclear Power Facility
. . ML–1 nuclear power plant
nuclear electric power generation
. **nuclear power plants**
. . Enrico Fermi atomic power plant
. . Hallam Nuclear Power Facility
. . ML–1 nuclear power plant
RT plasma core reactors

nuclear power reactors
GS nuclear electric power generation
. **nuclear power reactors**
. . KIWI reactors
. . . KIWI B reactors
. . . . KIWI B–1 Reactor
. . . . KIWI B–4 Reactor
. . Pathfinder nuclear reactor
. . plutonium recycle test reactor

. . space power reactors
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 50
. . . space power unit reactors
. . Tory 2 reactor
. . Tory 2–A reactor
. . Tory 2–C reactor
nuclear reactors
. **nuclear power reactors**
. . KIWI reactors
. . . KIWI B reactors
. . . . KIWI B–1 Reactor
. . . . KIWI B–4 Reactor
. . Pathfinder nuclear reactor
. . plutonium recycle test reactor
. . space power reactors
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 50
. . . space power unit reactors
. . Tory 2 reactor
. . Tory 2–A reactor
. . Tory 2–C reactor
RT boiling water reactors
breeder reactors
fast nuclear reactors
fast oxide reactors
high temperature gas cooled reactors
liquid metal fast breeder reactors
power reactors
pressurized water reactors
SNAP
sodium graphite reactors

nuclear powered ships
GS surface vehicles
. **nuclear powered ships**
. . Savannah nuclear ship
water vehicles
. ships
. . **nuclear powered ships**
. . . Savannah nuclear ship
RT aircraft carriers
cargo ships
navy
submarines

nuclear propelled aircraft
RT ∞ aircraft
∞ military aircraft
research aircraft

nuclear propulsion
UF *chemonuclear propulsion*
thermonuclear propulsion
GS propulsion
. **nuclear propulsion**
. . nuclear electric propulsion
RT aircraft engines
gaseous fission reactors
high temperature nuclear reactors
high temperature propellants
marine propulsion
matter–antimatter propulsion
mercury ion engines
NEW MOONS project
∞ nuclear energy
Rover project
Savannah nuclear ship
spacecraft propulsion
trident submarine
underwater propulsion

nuclear pumped lasers
DEF Lasers in which the excitation is supplied by a nuclear reactor as a high flux source or by the kinetic energy of the fission fragments only.
GS stimulated emission devices
. lasers
. . **nuclear pumped lasers**
RT optical pumping
optical resonance

nuclear pumping
DEF Laser-like pumping produced by electrons generated in nuclear reactions or, in general, by beams of charged particles.
RT electron pumping
energy transfer
fission products
gas lasers
lasers
optical pumping
population inversion
∞ pumping
stimulated emission
stimulated emission devices

nuclear quadrupole resonance
GS resonance
. **nuclear quadrupole resonance**
RT energy levels
quadrupoles

nuclear radiation
DEF Corpuscular emissions, such as alpha and beta particles, or electromagnetic radiation, such as gamma rays, originating in the nucleus of the atom.
GS **nuclear radiation**
. beta particles
. fast neutrons
. gamma ray beams
. gamma rays
. . gamma ray bursts
. neutron beams
. photoneutrons
. post-blast nuclear radiation
. spallation
. thermal neutrons
RT alpha particles
bremsstrahlung
Cerenkov radiation
corpuscular radiation
electromagnetic radiation
electron pumping
electron radiation
electrons
elementary particles
emission spectra
fission products
gamma ray absorption
health physics
high energy interactions
ionizing radiation
irradiation
neutrons
particle production
photons
∞ radiation
radiation effects
radiation hazards
radioactive contaminants
radioactive decay
radioactive materials
radioactivity
radiobiology
radiochemistry
Vela satellites

nuclear radiation spectroscopy
GS spectroscopy
. **nuclear radiation spectroscopy**
RT mass spectroscopy
spectroscopic analysis
vacuum spectroscopy

nuclear ramjet engines
GS engines
. rocket engines
. . **nuclear ramjet engines**
RT Pluto reactors
∞ rockets
supersonic low altitude missile

nuclear reactions
UF *neutron transmutation*
GS **nuclear reactions**
. nuclear fission
. nuclear interactions
. . nuclear capture
. . . electron capture
. . spin–orbit interactions
. . . electron capture
. . weak interactions (field theory)
. nuclear scattering
. . neutron scattering
. . resonance scattering
. nuclear transformations
. . transmutation
. photonuclear reactions
. proton scattering
. proton–proton reactions
. radioactive decay
. . alpha decay
. . neutron emission
. spallation
. thermonuclear reactions
. . nuclear fusion
. . . controlled fusion
RT Bragg curve
Compton effect
critical experiments
critical mass
electron scattering
emission
half life
high energy interactions
inhour equation
∞ interactions
internal conversion
pair production
particle interactions
particle production
photoneutrons
poisoning (reaction inhibition)
pomerons
radiation absorption
radiogenic materials
∞ reaction
reaction kinetics
reactivity
solar neutrinos
strong interactions (field theory)
subcritical mass

nuclear reactor control
RT confinement
∞ control
control rods
∞ reaction control

reactor safety

nuclear reactors
DEF Apparatus in which nuclear fission may be sustained in a self supporting chain reaction.
GS **nuclear reactors**
. annular core pulse reactors
. Astron thermonuclear reactor
. breeder reactors
. . Experimental Breeder Reactor 1
. . Experimental Breeder Reactor 2
. . light water breeder reactors
. . liquid metal fast breeder reactors
. engineering test reactors
. fast nuclear reactors
. . Experimental Breeder Reactor 1
. . Experimental Breeder Reactor 2
. . fast oxide reactors
. . fast test reactors
. . gas cooled fast reactors
. . liquid metal fast breeder reactors
. fusion reactors
. . heliotrons
. . spheromaks
. . stellarators
. fusion–fission hybrid reactors
. gas cooled reactors
. . experimental gas cooled reactors
. . gas cooled fast reactors
. . high temperature nuclear reactors
. . . high temperature gas cooled reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . KIWI B–1 Reactor
. . . . KIWI B–4 Reactor
. . Tory 2 reactor
. . Tory 2–A reactor
. . Tory 2–C reactor
. gaseous fission reactors
. Hanford reactors
. high flux isotope reactors
. liquid cooled reactors
. . liquid metal cooled reactors
. . . advanced sodium cooled reactor
. . . Experimental Breeder Reactor 1
. . . Experimental Breeder Reactor 2
. . . Lithium Cooled Reactor Experiment
. . . Los Alamos Molten Plutonium Reactor
. . . military compact reactors
. . . sodium graphite reactors
. . . sodium reactor experiment
. . organic cooled reactors
. . . experimental organic cooled reactors
. . water cooled reactors
. . . boiling water reactors
. . . . experimental boiling water reactors
. . . . Halden Boiling Water Reactor
. . . . Los Alamos Water Boiler Reactor
. . . . Pathfinder nuclear reactor
. . . . Spert reactors
. . . heavy water reactors
. . . . heavy water components test reactors
. . . . plutonium recycle test reactor
. . . . zero power reactor 2
. . . light water reactors
. . . NRX reactors
. . . Plum Brook Reactor
. . . pressurized water reactors
. . . . spectral shift control reactor
. . . swimming pool reactors
. . . zero power reactors
. . . . zero power reactor 2
. . . . zero power reactor 3
. . . . zero power reactor 6
. . . . zero power reactor 9
. molten salt nuclear reactors
. nuclear power reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . KIWI B–1 Reactor
. . . . KIWI B–4 Reactor
. . Pathfinder nuclear reactor
. . plutonium recycle test reactor
. . space power reactors
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 50
. . . space power unit reactors
. . Tory 2 reactor
. . Tory 2–A reactor
. . Tory 2–C reactor
. nuclear research and test reactors
. . advanced test reactors
. . experimental boiling water reactors
. . Experimental Breeder Reactor 1
. . Experimental Breeder Reactor 2
. . experimental gas cooled reactors
. . experimental organic cooled reactors
. . Health Physics Research Reactor
. . heavy water components test reactors
. . HERO Reactor
. . high temperature nuclear reactors
. . . high temperature gas cooled reactors
. . Janus Reactor
. . KIWI reactors
. . . KIWI B reactors
. . . . KIWI B–1 Reactor
. . . . KIWI B–4 Reactor
. Livermore Pool Type Reactor
. Los Alamos Molten Plutonium Reactor
. military compact reactors
. NRX reactors
. Plum Brook Reactor
. plutonium recycle test reactor
. sodium reactor experiment
. Spert reactors
. Tory 2 reactor
. Tory 2–A reactor
. Tory 2–C reactor
. Tower Shielding Reactor 2
. zero power reactor 2
. zero power reactor 3
. zero power reactor 6
. zero power reactor 9
. organic moderated reactors
. . experimental organic cooled reactors
. pebble bed reactors
. Phoebus nuclear reactor
. plasma core reactors
. Pluto reactors
. thermal reactors
. tokamak devices
. . Joint European Torus
. water moderated reactors
. . experimental boiling water reactors
. . heavy water components test reactors
. . plutonium recycle test reactor
RT closed cycles
control rods
coolants
fissile fuels
high flux beam reactors
inhour equation
loss of coolant
moderators
∞ nuclear energy
∞ piles
radiation shielding
reactor cores
reactor design
reactor materials
reactor physics
reactor safety
reactor startup tests
reactor technology
∞ reactors
Rover project
thermal neutrons
thermal pollution

nuclear relaxation
RT relaxation (mechanics)

nuclear research
GS research
. nuclear [illegible]
RT high energy [illegible] actions
laboratories
∞ nuclear energy
plasma core reactors
radiochemistry

nuclear research and test reactors
DEF A class of nuclear reactors used to do research into nuclear physics, reactor materials and design, and nuclear medicine.
UF *materials testing reactors*
nuclear test reactors
physical constants testing reactor
GS nuclear reactors
. **nuclear research and test reactors**
. . advanced test reactors
. . experimental boiling water reactors
. . Experimental Breeder Reactor 1
. . Experimental Breeder Reactor 2
. . experimental gas cooled reactors
. . experimental organic cooled reactors
. . Health Physics Research Reactor
. . heavy water components test reactors
. . HERO Reactor
. . high temperature nuclear reactors
. . . high temperature gas cooled reactors
. . Janus Reactor
. . KIWI reactors
. . . KIWI B reactors
. . . . KIWI B–1 Reactor
. . . . KIWI B–4 Reactor
. . Livermore Pool Type Reactor
. . Los Alamos Molten Plutonium Reactor
. . military compact reactors
. . NRX reactors
. . Plum Brook Reactor
. . plutonium recycle test reactor
. . sodium reactor experiment
. . Spert reactors
. . Tory 2 reactor
. . Tory 2–A reactor
. . Tory 2–C reactor
. . Tower Shielding Reactor 2

. . zero power reactor 2
. . zero power reactor 3
. . zero power reactor 6
. . zero power reactor 9
RT boiling water reactors
neutron sources
reactor design
reactor technology
∞ reactors
Transient Reactor Test Facility

nuclear rocket engines
DEF Rocket engines in which nuclear reactors are used as power sources or as sources of thermal energy. Used for thermionic reactors.
UF thermionic reactors
GS engines
. rocket engines
. . **nuclear rocket engines**
. . . nuclear lightbulb engines
RT booster rocket engines
ion engines
mercury ion engines
Phoebus nuclear reactor
Pluto reactors
restartable rocket engines
∞ rockets
sustainer rocket engines

nuclear scattering
SN (SCATTERING CAUSED BY NUCLEUS AND NOT BY ORBITAL ELECTRONS)
GS nuclear reactions
. **nuclear scattering**
. . neutron scattering
. . resonance scattering
scattering
. **nuclear scattering**
. . neutron scattering
. . resonance scattering
RT angular distribution
backscattering
coherent scattering
elastic scattering
electron scattering
forward scattering
incoherent scattering
inelastic scattering
Mandelstam representation

nuclear shielding
USE **radiation shielding**

nuclear spin
GS spin
. particle spin
. . **nuclear spin**
RT electron spin
energy levels
Kondo effect
magnetic resonance
Overhauser effect
quantum numbers
quantum theory

nuclear structure
RT energy levels
even–even nuclei
odd–odd nuclei

nuclear test reactors
USE **nuclear research and test reactors**

nuclear transformations
GS nuclear reactions
. **nuclear transformations**
. . transmutation

nuclear vulnerability
DEF The resistance of structures or materials to nuclear radiation or explosions.
GS vulnerability
. **nuclear vulnerability**
RT penetration
radiation effects
thermonuclear explosions

nuclear warfare
GS warfare
. **nuclear warfare**
RT civil defense
hardening (systems)
∞ nuclear energy

nuclear warheads
GS weapons
. warheads
. . **nuclear warheads**

nuclear wastes
USE **radioactive wastes**

nuclear weapons
GS weapons
. **nuclear weapons**
. . fission weapons
. . fusion weapons
RT bombs (ordnance)
explosives
missiles
∞ nuclear energy
projectiles
∞ rockets
space weapons
torpedoes
warheads
weapon systems
weapons delivery

nuclease
GS biopolymers
. proteins
. . enzymes
. . . **nuclease**
organic compounds
. proteins
. . enzymes
. . . **nuclease**

nucleate boiling
GS phase transformations
. vaporizing
. . boiling
. . . **nucleate boiling**
. . . . Leidenfrost phenomenon
RT film boiling
heat transfer
heat transfer coefficients
nucleation

nucleation
GS **nucleation**
. cloud seeding
RT accumulations
Aitken nuclei
atomic clusters
condensation nuclei
condensing
crystal growth
crystallization
drop size
∞ formation
heat treatment
ice nuclei
initiation
inoculation
jet condensers
metal clusters
molecular clusters
nucleate boiling
∞ nuclei
recrystallization
supercooling

∞ **nuclei**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT active galactic nuclei
Aitken nuclei
charged particles
chromosomes
condensation nuclei
ice nuclei
nucleation
nuclei (cytology)
nuclei (nuclear physics)
nucleogenesis
odd–odd nuclei

nuclei (cytology)
GS organelles
. **nuclei (cytology)**
RT cells (biology)
cytology
cytoplasm
genetics
∞ nuclei

nuclei (nuclear physics)
DEF The positively charged cores of atoms with which are associated practically the whole mass of each atom but only a minute part of its volume.
GS particles
. charged particles
. . energetic particles
. . . **nuclei (nuclear physics)**
. . . . alpha particles
. . . . deuterons
. . . . even–even nuclei
. . . . heavy nuclei
. . . . hypernuclei
. . . . odd–even nuclei
. . . . odd–odd nuclei
. . . . tritons
. corpuscular radiation
. . energetic particles
. . . **nuclei (nuclear physics)**
. . . . alpha particles
. . . . deuterons
. . . . even–even nuclei
. . . . heavy nuclei
. . . . hypernuclei
. . . . odd–even nuclei
. . . . odd–odd nuclei
. . . . tritons
RT atoms
corpuscular radiation
cosmic rays
elementary particles
ions
isotopes
neutrons
nuclear isobars
∞ nuclei
nucleons
∞ physics
protons

nucleic acid denaturation
USE **biopolymer denaturation**

nucleic acids
GS acids
nucleic acids
deoxyribonucleic acid
ribonucleic acids
biopolymers
nucleic acids
deoxyribonucleic acid
ribonucleic acids
organic compounds
nucleic acids
deoxyribonucleic acid
ribonucleic acids
RT biopolymer denaturation
guanosines
proteins
uridylic acid

nucleogenesis
RT genetics
mutations
∞ nuclei

nucleon potential
RT neutrons
nuclear particles
nuclear potential
∞ potential
protons
∞ radiation

nucleon–nucleon interactions
GS particle interactions
elementary particle interactions
nucleon–nucleon interactions
RT charged particles
∞ interactions

nucleon–nucleon scattering
GS scattering
nucleon–nucleon scattering
RT nuclear particles
particle collisions
Pomeranchuk theorem

nucleonics
RT∞ electronics
∞ nuclear energy
nuclear physics
technologies

nucleons
DEF In the classification of subatomic particles according to mass, the second heaviest type of particles; their mass is intermediate between that of the meson and the hyperon.
GS particles
elementary particles
nucleons
nuclear particles
nucleons
RT alpha particles
antinucleons
baryons
charged particles
fast neutrons
hyperons
neutrons
nuclei (nuclear physics)
protons
vector dominance model

nucleophiles
GS electron attachment
nucleophiles

nucleosides
GS organic compounds
carbohydrates
glucosides
nucleosides
adenines
guanosines
RT ribose
thymidine

nucleosynthesis
USE **nuclear fusion**

nucleotides
GS organic compounds
nucleotides
adenines
adenosines
adenosine diphosphate
adenosine triphosphate
cyclic AMP
polynucleotides
pyridine nucleotides
uridylic acid
RT biopolymers
proteins

nuclides
DEF Individual atoms of a given atomic number Z and mass number A.
GS chemical elements
nuclides
isotopes
aluminum isotopes
aluminum 26
aluminum 27
antimony isotopes
argon isotopes
arsenic isotopes
barium isotopes
beryllium isotopes
beryllium 7
beryllium 9
beryllium 10
bismuth isotopes
boron isotopes
boron 10
bromine isotopes
cadmium isotopes
calcium isotopes
carbon isotopes
carbon 12
carbon 13
carbon 14
cerium isotopes
cerium 137
cerium 144
cesium isotopes
cesium 133
cesium 134
cesium 137
cesium 144
cesium vapor
chromium isotopes
cobalt isotopes
cobalt 58
cobalt 60
dysprosium isotopes
erbium isotopes
europium isotopes
fluorine isotopes
gadolinium isotopes
gallium isotopes
germanium isotopes
gold isotopes
gold 198
hafnium isotopes
helium isotopes
holmium isotopes
hydrogen isotopes
deuterium
hydrogen 4
metallic hydrogen
tritium
iodine isotopes
iodine 125
iodine 131
iodine 132
iridium isotopes
iron isotopes
iron 57
iron 58
iron 59
krypton isotopes
krypton 85
lanthanum isotopes
lead isotopes
lithium isotopes
lutetium
lutetium isotopes
magnesium isotopes
manganese isotopes
mercury isotopes
molybdenum isotopes
neodymium isotopes
neon isotopes
nickel isotopes
niobium isotopes
niobium 95
nitrogen isotopes
nitrogen 15
nitrogen 16
nobelium isotopes
osmium isotopes
oxygen isotopes
oxygen 17
oxygen 18
palladium isotopes
phosphorus isotopes
phosphorus 32
platinum isotopes
polonium isotopes
polonium 208
polonium 209
polonium 210
potassium isotopes
potassium 38
potassium 39
potassium 40
praseodymium isotopes
promethium isotopes
protactinium isotopes
radioactive isotopes
astatine isotopes
beryllium 7
beryllium 9
beryllium 10
carbon 14
cerium 137
cerium 144
cesium 134
cesium 137
cesium 144
cobalt 58
cobalt 60
copper isotopes
gold 198
indium isotopes
iodine 125
iodine 131
iodine 132
iron 59
krypton 85
niobium 95
nitrogen 16
phosphorus 32

. . . polonium 208
. . . polonium 209
. . . polonium 210
. . . potassium 38
. . . potassium 40
. . . rubidium 86
. . . sodium 22
. . . sodium 24
. . . strontium 85
. . . strontium 88
. . . strontium 89
. . . strontium 90
. . . transuranium elements
. . . . americium
. . . . . americium isotopes
. . . . . americium 241
. . . . berkelium
. . . . californium
. . . . . californium isotopes
. . . . curium
. . . . . curium isotopes
. . . . . curium 242
. . . . . curium 244
. . . . einsteinium
. . . . fermium
. . . . lawrencium
. . . . mendelevium
. . . . neptunium
. . . . . neptunium isotopes
. . . . nobelium
. . . . plutonium
. . . . . plutonium isotopes
. . . . . plutonium 238
. . . . . plutonium 239
. . . . . plutonium 240
. . . . . plutonium 241
. . . . . plutonium 244
. . . . sergenium
. . . tritium
. . . uranium 232
. . . uranium 233
. . . uranium 238
. . . xenon 133
. . . xenon 135
. . . zirconium 95
. . radium isotopes
. . . radium 226
. . radon isotopes
. . rhenium isotopes
. . rhodium isotopes
. . rubidium isotopes
. . . rubidium 86
. . ruthenium isotopes
. . samarium isotopes
. . scandium isotopes
. . selenium isotopes
. . silicon isotopes
. . silver isotopes
. . sodium isotopes
. . . sodium 22
. . . sodium 24
. . strontium isotopes
. . . strontium 85
. . . strontium 87
. . . strontium 89
. . . strontium 90
. . sulfur isotopes
. . tantalum isotopes
. . technetium isotopes
. . tellurium
. . . tellurium isotopes
. . terbium isotopes
. . thallium isotopes
. . thorium isotopes
. . thulium isotopes
. . tin isotopes
. . . titanium isotopes
. . . tungsten isotopes
. . . uranium isotopes
. . . . uranium 232
. . . . uranium 233
. . . . uranium 234
. . . . uranium 235
. . . . uranium 238
. . . vanadium isotopes
. . . xenon isotopes
. . . . xenon 129
. . . . xenon 133
. . . . xenon 135
. . . ytterbium isotopes
. . . yttrium isotopes
. . . zinc isotopes
. . . zirconium isotopes
. . . . zirconium 95
RT isotopic enrichment
nuclear isobars
particle mass

null hypothesis
GS hypotheses
. **null hypothesis**
RT confidence limits
degrees of freedom
significance
statistical tests

null zones
GS regions
. **null zones**
RT diffraction patterns
field theory (physics)
∞ force
interferometry
radiation distribution
speckle interferometry
very long base interferometry

number theory
GS **number theory**
. addition theorem
. arithmetic
. . double precision arithmetic
. . fixed point arithmetic
. . floating point arithmetic
. congruences
. diophantine equation
. dividing (mathematics)
. exponents
. induction (mathematics)
. integers
. multiplication
. subtraction
RT addition
combinatorial analysis
decimals
digits
∞ division
enumeration
Fibonacci numbers
functions (mathematics)
∞ induction
infinity
∞ mathematics
∞ numbers
quaternions
subgroups
∞ theories
uniqueness theorem

∞ **numbers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT alphanumeric characters
Biot number
complex numbers
counting
Damkohler number
decimals
digits
dimensionless numbers
double precision arithmetic
Fibonacci numbers
integers
number theory
quantum numbers
random numbers
real numbers

numerical analysis
DEF Study of approximation methods using arithmetic techniques.
GS analysis (mathematics)
. **numerical analysis**
. . approximation
. . . Born approximation
. . . Born–Oppenheimer approximation
. . . Chebyshev approximation
. . . Eddington approximation
. . . essentially non-oscillatory schemes
. . . finite difference theory
. . . finite element method
. . . Hartree approximation
. . . least squares method
. . . mean square values
. . . Milne method
. . . multigrid methods
. . . Newton methods
. . . . Newton–Raphson method
. . . discretization (mathematics)
. . . numerical differentiation
. . . Oseen approximation
. . . Pade approximation
. . . particle in cell technique
. . . Pohlhausen method
. . . predictor–corrector methods
. . . Rayleigh–Ritz method
. . . relaxation method (mathematics)
. . . Reynolds averaging
. . . Ritz averaging method
. . . Schwartz method
. . . Sommerfeld approximation
. . . TVD schemes
. . . upwind schemes (mathematics)
. . . vortex in cell technique
. . boundary integral method
. . computational astrophysics
. . computational chemistry
. . computational electromagnetics
. . computational fluid dynamics
. . difference equations
. . error analysis
. . finite volume method
. . flux difference splitting
. . flux vector splitting
. . Glimm method
. . Graeff calculus
. . interpolation
. . iteration
. . . conjugate gradient method
. . . iterative solution
. . . Newton methods
. . . . Newton–Raphson method
. . . predictor–corrector methods
. . Monte Carlo method
. . nomographs
. . numerical integration
. . . Runge–Kutta method
. direct numerical simulation

. . truncation errors
RT adjoints
algorithms
alternating direction implicit methods
∞ analyzing
∞ applications of mathematics
asymptotes
computational grids
computer programming
Crank–Nicholson method
differential equations
ill–conditioned problems (mathematics)
ill–posed problems (mathematics)
isoparametric finite elements
linear programming
mathematical tables
∞ mathematics
method of moments
significance
spatial marching
time marching
trajectory analysis

numerical aperture
(added January 1995)
DEF The sine of the vertex angle of the largest cone of meridional rays that can enter or leave an optical system or element, multiplied by the refractive index of the medium in which the vertex of the cone is located. Generally measured with respect to an object or image point, and will vary as that point is moved.
GS openings
. apertures
. . **numerical aperture**
RT fiber optics
geometrical optics
lenses
optical coupling
optical fibers
optical properties
resolution

numerical control
UF *computerized control*
GS automatic control
. **numerical control**
RT ∞ automation
computer programs
∞ control
control systems design
digital command systems
digital techniques
electric control
interactive control
machine tools
production engineering
sequential control
standardization

numerical data bases
GS data bases
. **numerical data bases**
RT information retrieval
on–line systems

numerical differentiation
DEF Approximate estimation of a derivative of a function by numerical techniques.
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **numerical differentiation**
. real variables
. . **numerical differentiation**
RT algorithms
computer techniques
differential calculus
differential equations
estimating
functions (mathematics)
∞ theories

numerical flow visualization
GS flow visualization
. **numerical flow visualization**
scientific visualization
. **numerical flow visualization**
RT computational fluid dynamics
computerized simulation
flow distribution
hydraulic analogies

numerical integration
UF *Cowell method*
GS analysis (mathematics)
. numerical analysis
. . **numerical integration**
. . . Runge–Kutta method
. real variables
. . measure and integration
. . . **numerical integration**
. . . . Runge–Kutta method
RT differential equations
digital integrators
integral calculus

numerical stability
GS stability
. **numerical stability**
RT approximation
backward differencing
difference equations
differential equations
ill–conditioned problems (mathematics)
ill–posed problems (mathematics)
strange attractors

numerical weather forecasting
GS forecasting
. weather forecasting
. . **numerical weather forecasting**
meteorology
. weather forecasting
. . **numerical weather forecasting**
RT Atmospheric General Circulation Models
atmospheric models
aviation meteorology
computerized simulation
long range weather forecasting
mathematical models
statistical weather forecasting

nunataks
GS landforms
. islands
. . **nunataks**
RT Arctic regions
rocks
sea ice

Nusselt number
DEF A number expressing the ratio of convective to conductive heat transfer between a solid boundary and a moving fluid, defined as hl/k where h is the heat transfer coefficient, l is the characteristic length, and k is the thermal conductivity of the fluid. (Named after Wilhelm Nusselt, German engineer.)
GS dimensionless numbers
. **Nusselt number**
ratios
. **Nusselt number**
RT convective heat transfer
heat transfer
Prandtl number
Schmidt number

nutation
DEF The oscillation of the axis of any rotating body, as a gyroscope rotor. Specifically, in astronomy, irregularities in the precessional motion of the equinoxes because of varying positions of the moon and, to a lesser extent, of other celestial bodies with respect to the ecliptic. Used for nutational oscillation.
UF *nutational oscillation*
GS **nutation**
. Chandler wobble
RT actuation
coning motion
displacement
∞ dynamics
Earth orientation
kinematics
libration
librational motion
∞ motion
perturbation
polar wandering (geology)
precession
rotation
vibration

nutation dampers
RT control moment gyroscopes
∞ dampers
oscillation dampers
spacecraft stability

nutational oscillation
USE **nutation**

∞ nutrients
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aquiculture
caloric requirements
carbohydrates
eutrophication
fats
fatty acids
fishes
life support systems
lipid metabolism
lipids
minerals
nutrition
nutritional requirements
proteins
trace elements
vitamins

nutrition
RT biochemistry
broths
caloric requirements
diets
∞ food
metabolism
nitrogen metabolism
∞ nutrients
nutritional requirements
space flight feeding

nutritional requirements
GS **nutritional requirements**
. caloric requirements
RT atrophy
∞ nutrients
nutrition
space flight feeding

synthetic food

nuts (fasteners)
GS fasteners
. **nuts (fasteners)**
RT anchors (fasteners)
bolts
holders
screws
threads

nuts (fruits)
RT angiosperms
orchards
seeds

Nylon (trademark)
GS **fibers**
. synthetic fibers
. . **Nylon (trademark)**
plastics
. synthetic resins
. . thermosetting resins
. . . furan resins
. . . . polyamide resins
. . . . . **Nylon (trademark)**
resins
. synthetic resins
. . thermosetting resins
. . . furan resins
. . . . polyamide resins
. . . . . **Nylon (trademark)**
RT polymeric films
∞ polymers

nylon resins
USE **polyamide resins**

Nyquist diagram
GS diagrams
. **Nyquist diagram**
RT control stability
transfer functions

Nyquist frequencies
GS frequencies
. **Nyquist frequencies**
RT linear receivers

nystagmus
DEF An involuntary oscillation of the eyeballs, especially occurring as a result of eye fixations and stimulations of the inner ear during rotation of the body.
GS eye movements
. **nystagmus**
. . vestibular nystagmus
RT electronystagmography
eye (anatomy)

O

O ring seals
GS seals (stoppers)
. **O ring seals**
RT gaskets
glands (seals)
hermetic seals
labyrinth seals
∞ rings
Space Shuttle Boosters

O stars
GS celestial bodies
. stars
. . early stars
. . . hot stars
. . . . **O stars**
RT blue stars
Wolf-Rayet stars

Oak Ridge isochronous cyclotron
UF *ORIC cyclotron*
GS particle accelerators
. cyclotrons
. . **Oak Ridge isochronous cyclotron**

OAO
UF *Orbiting Astronomical Observatory*
S-18 satellite
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **OAO**
. . . . OAO 1
. . . . OAO 2
. . . . OAO 3
observatories
. astronomical observatories
. . astronomical satellites
. . . **OAO**
. . . . OAO 1
. . . . OAO 2
. . . . OAO 3
RT Agena B rocket vehicle
Atlas launch vehicles
HEAO
HEAO 1
HEAO 2
HEAO 3
manned orbital telescopes

OAO 1
UF *OAO-A*
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . OAO
. . . . **OAO 1**
observatories
. astronomical observatories
. . astronomical satellites
. . . OAO
. . . . **OAO 1**
RT Atlas Centaur launch vehicle

OAO 2
UF *OAO-A2*
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . OAO
. . . . **OAO 2**
observatories
. astronomical observatories
. . astronomical satellites
. . . OAO
. . . . **OAO 2**
RT Atlas Centaur launch vehicle

OAO 3
UF *Copernicus spacecraft*
OAO-C
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . OAO
. . . . **OAO 3**
observatories
. astronomical observatories
. . astronomical satellites
. . . OAO
. . . . **OAO 3**
RT Atlas Centaur launch vehicle

OAO-A
USE **OAO 1**

OAO-A2
USE **OAO 2**

OAO-C
USE **OAO 3**

oases
RT aquifers
arid lands
desertification
deserts
potable water
springs (water)
vegetation
wells

oats
GS farm crops
. grains (food)
. . **oats**
plants (botany)
. **oats**
RT agriculture
botany
crop growth
crop vigor
curing
Earth resources
∞ food
grasses
irrigation
seeds

Oberon
DEF A satellite of Uranus orbiting at a mean distance of 587,000 kilometers.
GS celestial bodies
. natural satellites
. . Uranus satellites
. . . **Oberon**
RT Uranus (planet)

obesity
RT body fluids
body measurement (biology)
body size (biology)
body volume (biology)
body weight
metabolism

object programs
GS computer programs
. **object programs**

object-oriented programming
(added October 1991)
DEF The use of a programming language consisting of a sequence of commands directed at objects.
GS computer programming
. **object-oriented programming**
RT Ada (programming language)
C++ (programming language)
software development tools
software engineering

oblate spheroids
DEF Ellipsoids of revolution, the shorter axis of which is the axis of revolution.
GS geometry
. Euclidean geometry
. . analytic geometry
. . . spheroids
. . . . **oblate spheroids**
RT ellipticity
fineness ratio
flattening
geodesy
geoids
prolate spheroids
shapes
solar oblateness

oblique coordinates
DEF Magnitudes defining a point relative to two intersecting nonperpendicular lines, called axes.
GS coordinates
. **oblique coordinates**
RT Cartesian coordinates

oblique shock waves
DEF Shock waves attached to the bow and tail of an aerodynamic vehicle moving faster than the speed of sound. The sides of the oblique shock waves form the Mach cone.
GS elastic waves
. shock waves
. . **oblique shock waves**
RT magnetohydrodynamic waves
normal shock waves
shock layers
supersonic compressors

oblique wings
GS airfoils
. wings
. . **oblique wings**
RT aerodynamic configurations
aircraft parts
aircraft structures
drone aircraft
pilotless aircraft
remotely piloted vehicles
wing planforms

obliqueness
DEF The state of being neither perpendicular nor horizontal.
RT angles (geometry)
incident radiation

obscuration
USE **occultation**

observability (systems)
DEF The property of a system for which observations of the output variables always is

sufficient to determine the initial values of all state variables.
RT boundary value problems
control theory
dependent variables
feedback control
independent variables
observation
parameter identification
state vectors
system identification
∞ systems
systems analysis
systems engineering

observation
GS **observation**
. Earth observations (from space)
. . satellite observation
. radio observation
. sky surveys (astronomy)
. space observations (from Earth)
. visual observation
RT counting
data acquisition
detection
evaluation
examination
forest fire detection
NOESS
observability (systems)
∞ performance
reconnaissance
surveillance

observation aircraft
GS **observation aircraft**
. Cessna L-19 aircraft
. OH-4 helicopter
. OH-5 helicopter
. OH-6 helicopter
. OV-1 aircraft
. OV-10 aircraft
RT ∞ aircraft
antisubmarine warfare aircraft
arc clouds
balloons
flying platforms
gliders
HS-801 aircraft
light aircraft
light helicopters
∞ military aircraft
reconnaissance aircraft
utility aircraft
weather reconnaissance aircraft

observatories
GS **observatories**
. astronomical observatories
. . astronomical satellites
. . . Astronomical Netherlands Satellite
. . . Gamma Ray Observatory
. . . Ginga satellite
. . . HEAO
. . . . HEAO 1
. . . . HEAO 2
. . . . HEAO 3
. . . . HEAO 4
. . . Hubble Space Telescope
. . . Infrared Astronomy Satellite
. . . Infrared Space Observatory (ISO)
. . . IUE
. . . Large Deployable Reflector
. . . Magellan ultraviolet astronomy satellite
. . . OAO
. . . . OAO 1
. . . . OAO 2
. . . . OAO 3
. . . OSO
. . . . AOSO
. . . . OSO-1
. . . . OSO-2
. . . . OSO-3
. . . . OSO-4
. . . . OSO-5
. . . . OSO-6
. . . . OSO-7
. . . . OSO-8
. . . . OSO-C
. . . Quasat
. . . SAS
. . . . Explorer 53 satellite
. . . . SAS-1
. . . . SAS-2
. . . . SAS-3
. . . Space Infrared Telescope Facility
. . . Spartan satellites
. . . Tenma satellite
. . . X Ray Astrophysics Facility
. . Astroplane
. . ROSAT mission
. . SOFIA (airborne observatory)
. . solar observatories
. . . OSO
. . . . AOSO
. . . . OSO-1
. . . . OSO-2
. . . . OSO-3
. . . . OSO-4
. . . . OSO-5
. . . . OSO-6
. . . . OSO-7
. . . . OSO-8
. . . . OSO-C
. . . Pinhole Occulter Facility
. . European Southern Observatory
. . geophysical observatories
. . . OGO
. . . . EGO
. . . . OGO-3
. . . . OGO-5
. . . . OGO-A
. . . . POGO
. . . . OGO-4
. . . . OGO-6
. . . . OGO-C
. . . OSO
. . . . AOSO
. . . . OSO-1
. . . . OSO-2
. . . . OSO-3
. . . . OSO-4
. . . . OSO-5
. . . . OSO-6
. . . . OSO-7
. . . . OSO-8
. . . . OSO-C
. . Jodrell Bank Observatory
. . Kuiper Airborne Observatory
. . lunar observatories
RT artificial satellites

obsidian
GS rocks
. igneous rocks
. . **obsidian**
. . . moldavite
RT glass
minerals
powder (particles)
pumice
silicon dioxide
soils

obsidian glass
GS glass
. **obsidian glass**

obstacle avoidance
DEF The use of sensors utilizing laser triangulation as means of preventing collisions, especially in the operation of roving vehicles on planetary surfaces.
RT aircraft maneuvers
evasive actions
tactics
terrain following
vulnerability

obstacles
USE **barriers**

obstructing
USE **blocking**

occipital lobes
GS anatomy
. nervous system
. . central nervous system
. . . brain
. . . . cerebrum
. . . . . **occipital lobes**

occlusion
DEF Specifically, the trapping of undissolved gas in a solid during solidification.
RT degassing
gas-metal interactions
gas-solid interfaces
solidification

occultation
DEF The disappearance of a body behind another body of larger apparent size. Used for obscuration.
UF *obscuration*
GS **occultation**
. lunar occultation
. . solar eclipses
. radio occultation
. stellar occultation
RT ∞ conjunction
eclipses
extinguishing
Pinhole Occulter Facility
∞ transit

occupation
RT industrial safety
personnel
work

occupational diseases
GS diseases
. **occupational diseases**
RT anemias
carbon monoxide poisoning
cataracts
emphysema
hazards
health physics
lead poisoning
leukemias
operational hazards
public health
pulmonary lesions
radiation hazards
toxic hazards
tumors

occurrences
RT events

ocean bottom
RT beds (geology)
continental shelves
core sampling
cratons
deep water
geology
marine chemistry
mid-ocean ridges
mud
oceanography
sea floor spreading
seamounts
sediments
sludge
underwater resources

ocean color scanner
DEF A multispectral scanning radiometer which is geared to observe ocean features such as chlorophyll, sediments, and topography in the invisible and thermal ranges of radiation.
GS scanners
. ocean color scanner
. . Coastal Zone Color Scanner
RT chlorophylls
coastal water
colorimetry
multispectral band scanners
ocean data acquisitions systems
oceanographic parameters
oceanography
photomapping
remote sensors
water color

ocean currents
GS circulation
. water circulation
. . water currents
. . . ocean currents
. . . . coastal currents
. . . . El Nino
. . . . Gulf Stream
. . . . Lomonosov current
RT core sampling
∞ currents
fluid flow
frontal waves
gyres
hydrography
Kelvin waves
littoral drift
littoral transport
ocean dynamics
oceanography
oceans
pressure ice
salinity
Spitsbergen (Norway)
tidal waves
tide powered generators
tide powered machines
tidepower
tides
TOPEX
upwelling water
waterwave energy conversion
waterwave powered machines

ocean data acquisitions systems
UF *ocean data platforms*
ocean data stations
ODAS
RT Argos system
automatic weather stations
buoys
Coastal Zone Color Scanner
∞ data
data acquisition
ground stations
instrument packages
meteorological parameters
ocean color scanner
oceanographic parameters
ships
transoceanic systems
underwater research laboratories
weather stations

ocean data platforms
USE **ocean data acquisitions systems**

ocean data stations
USE **ocean data acquisitions systems**

ocean dynamics
DEF The study of the controlling forces in different ocean phenomena.
RT air water interactions
dynamic characteristics
∞ dynamics
fluid dynamics
hydrodynamics
ocean currents
ocean models
ocean surface
oceanography
water waves

ocean floor spreading
USE **sea floor spreading**

ocean models
GS models
. ocean models
RT air water interactions
atmospheric models
climate models
dynamic models
marine environments
mathematical models
ocean dynamics
oceanography
Sargasso Sea
sea roughness
sea states

ocean surface
RT Earth surface
fluid flow
hydrography
ocean dynamics
oceanographic parameters
oceanography
Sargasso Sea
sea level
sea roughness
sea states
sea surface temperature
sea truth
sea water
storm surges
∞ surfaces
tidal waves
tide powered generators
tide powered machines
tidepower
tides
TOPEX
waterwave energy conversion
waterwave powered machines

ocean temperature
DEF Surface or subsurface temperature of an entire or specific region of an ocean.
GS oceanographic parameters
. ocean temperature
. . sea surface temperature
temperature
. water temperature
. . ocean temperature
. . . sea surface temperature
RT el Nino
oceanography
oceans
offshore energy sources
sea states
sea truth
sea water
seas
solar sea power plants
surface temperature
temperature distribution
temperature gradients
thermal pollution

ocean thermal energy conversion
GS energy conversion
. ocean thermal energy conversion
RT ∞ conversion
∞ energy sources
geothermal energy conversion
geothermal technology
solar sea power plants
temperature

oceanographic parameters
GS oceanographic parameters
. ocean temperature
. . sea surface temperature
RT Atmospheric & Oceanographic Inform Sys
Coastal Zone Color Scanner
integrated global ocean station systems
meteorological parameters
ocean color scanner
ocean data acquisitions systems
ocean surface
salinity
sea states

oceanography
RT artificial harbors
Atmospheric & Oceanographic Inform Sys
bathymeters
bay ice
breakwaters
coastal currents
Coastal Zone Color Scanner
core sampling
deep scattering layers
deep water
deepwater terminals
Earth & Ocean Physics Applications Program
Earth planetary structure
Earth resources
Earth sciences
environmental monitoring
EROS (satellites)
estuaries
fiords
frontal waves
GARP Atlantic Tropical Experiment
geography
geology

geophysics
gyres
harbors
hydroclimatology
hydrography
hydrology
ice floes
ice mapping
isthmuses
Landsat satellites
marine biology
marine environments
marine meteorology
marine resources
marine technology
marshlands
meteorology
mid-ocean ridges
ocean bottom
ocean color scanner
ocean currents
ocean dynamics
ocean models
ocean surface
ocean temperature
oceans
offshore docking
offshore platforms
oil slicks
pelagic zone
∞ physical sciences
red tide
reefs
Sargasso Sea
∞ science
sea grasses
sea ice
sea level
sea roughness
sea states
sea surface temperature
sea water
seas
SEASAT 1
SEASAT program
SEASAT satellites
SEASAT-B satellite
seaweeds
shallow water
shipyards
shoals
shorelines
storm surges
tanker terminals
thermoclines
tidal waves
tide powered generators
tidepower
tides
TOPEX
topography
underwater research laboratories
underwater resources
water circulation
water currents
waterflow
waterwave energy
waterwave energy conversion
wetlands

oceans
DEF The continuous salt water bodies that surround the continents and fill the Earth's great depressions.
GS **oceans**
. Antarctic Ocean
. Arctic Ocean
. Atlantic Ocean
. Indian Ocean
. Pacific Ocean
RT coastal currents
coastal water
coasts
deep water
Earth hydrosphere
geography
keys (islands)
marine resources
nearshore water
ocean currents
ocean temperature
oceanography
seas
seaweeds
shallow water
shoals
shorelines
sounds (topographic features)
thermal pollution
tidal flats
tide powered generators
water color
water depth
water resources
waterwave energy conversion

Octahedral Research Satellites
USE **Environmental Research Satellites**

octahedrite
USE **anatase**

octahedrons
GS geometry
. Euclidean geometry
. . polyhedrons
. . . **octahedrons**

∞ **octane**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT antiknock additives
octanes

octane number
RT gasoline

octanes
SN (ACYCLIC HYDROCARBONS)
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . **octanes**
RT antiknock additives
∞ octane

octaves
DEF The intervals between two frequencies having the ratio 1:2.
GS range (extremes)
. frequency ranges
. . **octaves**
RT acoustics
music

octets
GS valence
. **octets**
RT atomic structure
chemical bonds

octoates
GS esters
. **octoates**

octol (explosive)
GS explosives
. **octol (explosive)**

octopuses
GS animals
. invertebrates
. . mollusks
. . . cephalopods
. . . . **octopuses**

ocular circulation
GS circulation
. blood circulation
. . **ocular circulation**

oculogravic illusions
GS psychological effects
. illusions
. . **oculogravic illusions**
RT gravireceptors
otolith organs
vertical perception

oculometers
GS measuring instruments
. optical measuring instruments
. . **oculometers**
optical equipment
. optical measuring instruments
. . **oculometers**
RT eye movements
∞ instruments
optical tracking

oculomotor nerves
GS anatomy
. nervous system
. . nerves
. . . **oculomotor nerves**
. sense organs
. . eye (anatomy)
. . . **oculomotor nerves**
RT vision

ODAS
USE **ocean data acquisitions systems**

odd-even nuclei
GS particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **odd-even nuclei**
. corpuscular radiation
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **odd-even nuclei**
RT even-even nuclei
odd-odd nuclei

odd-odd nuclei
GS particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **odd-odd nuclei**
. corpuscular radiation
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **odd-odd nuclei**
RT even-even nuclei
nuclear structure
∞ nuclei
odd-even nuclei

Odessa meteorite
GS celestial bodies
. meteorites

. . iron meteorites
. . . . **Odessa meteorite**

odors
RT air pollution
combustion products
exhaust gases
gases

off–on control
DEF Flicker control, especially as applied to rockets. Used for bang–bang control.
UF *bang–bang control*
GS automatic control
. **off–on control**
RT∞ control
control equipment
control theory
proportional control
servocontrol
solenoid valves

offgassing
DEF The relative high mass loss characteristic of many nonmetallic materials upon initial vacuum exposure.
RT degassing
vacuum
vacuum effects

office automation
RT∞ automation
man machine systems
word processing

Office of Space & Terrestr Applic Payloads
USE **OSTA–1 payload**
OSTA–2 payload
OSTA–3 payload

offshore docking
RT artificial harbors
cargo ships
deepwater terminals
marine technology
marine transportation
oceanography
ship terminals
tanker ships
tanker terminals
∞ tankers
terminal facilities
transportation

offshore energy sources
RT crude oil
deepwater terminals
drilling
energy technology
marine technology
ocean temperature
oil exploration
oil fields
sea breeze
seepage

offshore platforms
RT artificial harbors
cargo ships
deepwater terminals
marine technology
oceanography
∞ platforms
tanker ships
tanker terminals
∞ tankers
terminal facilities
transportation

offshore reactor sites
GS sites
. **offshore reactor sites**
RT reactor design
reactor safety
reactor technology
remote regions

OFT
USE **Space Transportation System flights**

OFT 1
USE **Space Transportation System 1 flight**

OFT 2
USE **Space Transportation System 2 flight**

OFT 3
USE **Space Transportation System 3 flight**

OFT 4
USE **Space Transportation System 4 flight**

ogee shape
GS shapes
. **ogee shape**
RT variable sweep wings

ogee wings
USE **variable sweep wings**

ogives
DEF Bodies of revolution formed by rotating a circular arc about an axis that intersects the arc; the shape of these bodies; also noses of projectiles or the like so shaped.
RT bodies of revolution
ellipsoids
fairings
nose cones
spheres
streamlined bodies
symmetrical bodies

OGO
UF *Orbiting Geophysical Observatory*
GS artificial satellites
. geophysical satellites
. . **OGO**
. . . EGO
. . . OGO–3
. . . OGO–5
. . . OGO–A
. . . POGO
. . . . OGO–4
. . . . OGO–6
. . . . OGO–C
observatories
. geophysical observatories
. . **OGO**
. . . EGO
. . . OGO–3
. . . OGO–5
. . . OGO–A
. . . POGO
. . . . OGO–4
. . . . OGO–6
. . . . OGO–C
RT Gamma Ray Observatory

OGO–3
UF *OGO–B*
GS artificial satellites
. geophysical satellites
. . OGO
. . . . **OGO–3**
observatories
. geophysical observatories
. . OGO
. . . . **OGO–3**
RT Thor Agena launch vehicle

OGO–4
UF *OGO–D*
GS artificial satellites
. geophysical satellites
. . OGO
. . . . POGO
. . . . . **OGO–4**
observatories
. geophysical observatories
. . OGO
. . . . POGO
. . . . . **OGO–4**
RT geodesy

OGO–5
UF *OGO–E*
GS artificial satellites
. geophysical satellites
. . OGO
. . . . **OGO–5**
observatories
. geophysical observatories
. . OGO
. . . . **OGO–5**
RT geodesy

OGO–6
UF *OGO–F*
GS artificial satellites
. geophysical satellites
. . OGO
. . . . POGO
. . . . . **OGO–6**
observatories
. geophysical observatories
. . OGO
. . . . POGO
. . . . . **OGO–6**

OGO–A
UF *S–49 satellite*
GS artificial satellites
. geophysical satellites
. . OGO
. . . . **OGO–A**
observatories
. geophysical observatories
. . OGO
. . . . **OGO–A**
RT Atlas Agena launch vehicles

OGO–B
USE **OGO–3**

OGO–C
UF *S–50 satellite*
GS artificial satellites
. geophysical satellites
. . OGO
. . . . POGO
. . . . . **OGO–C**
observatories
. geophysical observatories
. . OGO
. . . . POGO
. . . . . **OGO–C**

OGO–D
USE **OGO–4**

OGO-E
USE **OGO-5**

OGO-F
USE **OGO-6**

OH-4 helicopter
UF *HO-4 helicopter*
GS Bell aircraft
. **OH-4 helicopter**
light aircraft
. light helicopters
. . **OH-4 helicopter**
observation aircraft
. **OH-4 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . light helicopters
. . . . **OH-4 helicopter**
. . . military helicopters
. . . . **OH-4 helicopter**

OH-5 helicopter
UF *FH-1100 helicopter*
HO-5 helicopter
GS Fairchild-Hiller aircraft
. **OH-5 helicopter**
Hiller aircraft
. **OH-5 helicopter**
light aircraft
. light helicopters
. . **OH-5 helicopter**
observation aircraft
. **OH-5 helicopter**
passenger aircraft
. **OH-5 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . light helicopters
. . . . **OH-5 helicopter**
. . . military helicopters
. . . . **OH-5 helicopter**
RT rigid rotor helicopters

OH-6 helicopter
UF *HO-6 helicopter*
LOH helicopter
GS Hughes aircraft
. **OH-6 helicopter**
light aircraft
. light helicopters
. . **OH-6 helicopter**
observation aircraft
. **OH-6 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . light helicopters
. . . . **OH-6 helicopter**
. . . military helicopters
. . . . **OH-6 helicopter**

OH-13 helicopter
UF *H-13 helicopter*
Sioux helicopter
UH-13 helicopter
GS Bell aircraft
. **OH-13 helicopter**
light aircraft
. **OH-13 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **OH-13 helicopter**

OH-23 helicopter
UF *H-23 helicopter*
Raven helicopter
UH-12 helicopter
GS Fairchild-Hiller aircraft
. **OH-23 helicopter**
light aircraft
. **OH-23 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **OH-23 helicopter**

OH-58 helicopter
GS light aircraft
. light helicopters
. . **OH-58 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . light helicopters
. . . . **OH-58 helicopter**
. . . military helicopters
. . . . **OH-58 helicopter**

Ohio
GS nations
. United States
. . **Ohio**
RT Ohio River (US)
Wabash River Basin (IL-IN-OH)

Ohio River (US)
GS rivers
. **Ohio River (US)**
RT Illinois
Indiana
Kentucky
Ohio
Pennsylvania
West Virginia

ohmic dissipation
UF *Joule heating*
GS dissipation
. **ohmic dissipation**
RT Joule-Thomson effect
levitation melting
losses

ohmmeters
DEF Direct-reading instruments for measuring electrical resistance. They are provided with a scale, usually graduated in either ohms, megohms, or both. If the scale is graduated in megohms, the instrument is usually called a megohmmeter.
GS measuring instruments
. **ohmmeters**
RT electrical conductivity meters
electrical impedance
electrical measurement
electrical resistance
resistance thermometers
transconductance
Wheatstone bridges

Ohms law
DEF The current in an electric circuit is inversely proportional to the resistance of the circuit and is directly proportional to the electromotive force in the circuit. Ohm's law applies, strictly speaking, only to linear constant-current circuits.
GS circuits
. **Ohms law**
laws
. **Ohms law**
RT ∞ conductivity
electric current
electrical resistance
electricity
electromotive forces
transconductance
volt-ampere characteristics

Ohzora satellite
USE **EXOS-C satellite**

oil additives
GS additives
. **oil additives**

oil exploration
GS exploration
. **oil exploration**
RT crude oil
drilling
energy policy
geology
natural gas exploration
offshore energy sources
tar sands
underwater resources

oil fields
DEF Surface boundary of an area from which petroleum is obtained, may correspond to an oil pool or may be circumscribed by political or legal limits.
GS resources
. Earth resources
. . **oil fields**
RT crude oil
drilling
methane
natural gas
offshore energy sources
oils
tar sands

oil pollution
GS pollution
. environment pollution
. . water pollution
. . . **oil pollution**
RT coastal ecology
wetlands

oil recovery
RT energy technology
reclamation
∞ recovery
reuse

oil slicks
UF slicks
RT dumping
environment pollution
oceanography
pollution
spilling
water pollution

oils
GS **oils**
. castor oil
. crude oil
. fuel oils
. lubricating oils
. mineral oils
. shale oil
RT energy policy
fats
fuels
greases

hydraulic fluids
kerogen
lipid metabolism
lubricants
oil fields
petroleum products
pitch (material)
retort processing
tar sands

Okazaki–Levy–Rudenko comet
(added May 1991)
GS celestial bodies
. comets
. . Okazaki–Levy–Rudenko comet

Okhansk meteorite
GS celestial bodies
. meteorites
. . stony meteorites
. . . chondrites
. . . . Okhansk meteorite
RT iron meteorites

Oklahoma
GS nations
. United States
. . Oklahoma
RT Lake Texoma (OK–TX)

olefins
USE alkenes

oleic acid
GS acids
. carboxylic acids
. . fatty acids
. . . oleic acid
organic compounds
. carboxylic acids
. . fatty acids
. . . oleic acid

olfactory perception
UF *smell*
GS perception
. sensory perception
. . olfactory perception
RT chemoreceptors
sense organs

oligomers
(added January 1990)
GS oligomers
. dimers
. trimers
RT monomers
polymer chemistry
polymerization
∞ polymers

olivine
GS minerals
. olivine
. . forsterite
RT dunite
igneous rocks
monticellite
peridotite
regolith
rocks
soils

Oman
GS nations
. Oman

OMCVD (vapor deposition)
USE metalorganic chemical vapor deposition

OME
USE Orbit Maneuvering Engine (Space Shuttle)

Omega Navigation System
DEF A very long distance navigation system operating at approximately 10 kHz (kilohertz), in which hyperbolic lines of position are determined by measurement of the difference in travel time of continuous wave signals from two transmitters separated by 5000 nmi (nautical miles) to 6000 nmi (9000 km [kilometers] to 11000 km) or in which changes in distances from the transmitters are measured by counting RF (radio frequency) wavelengths in the space of lanes as the vehicle moves from a known position, the lanes being counted by phase comparison with a stable oscillator aboard the vehicle.
GS navigation
. Omega Navigation System
RT air navigation
∞ systems

omega–mesons
GS particles
. elementary particles
. . bosons
. . . mesons
. . . . omega–mesons
. . fermions
. . . baryons
. . . . omega–mesons
. . hadrons
. . . baryons
. . . . omega–mesons
. . . mesons
. . . . omega–mesons
. nuclear particles
. . bosons
. . . mesons
. . . . omega–mesons
RT charged particles
eta–mesons

omegatrons
GS particle accelerators
. cyclotrons
. . omegatrons

Omicron Ceti star
UF *Mira Ceti star*
GS celestial bodies
. stars
. . giant stars
. . . Omicron Ceti star
. . late stars
. . . cool stars
. . . . Mira variables
. . . . . Omicron Ceti star
. . variable stars
. . . Mira variables
. . . . Omicron Ceti star

omnidirectional antennas
GS antennas
. omnidirectional antennas
. . monopole antennas
. . . whip antennas
. . turnstile antennas
RT dipole antennas
directional antennas
microwave antennas
radio antennas

omnidirectional radio ranges
GS navigation aids
. beacons
. . radio beacons
. . . omnidirectional radio ranges
. . . . self calibrating omnirange
radio equipment
. radio transmitters
. . radio beacons
. . . omnidirectional radio ranges
. . . . self calibrating omnirange
transmitters
. radio transmitters
. . radio beacons
. . . omnidirectional radio ranges
. . . . self calibrating omnirange
RT distance measuring equipment
radio navigation
solar compasses

Omnipol HC–3 helicopter
USE HC–3 helicopter

Omnipol L–29 aircraft
USE L–29 jet trainer

Omnipol Z–37 aircraft
USE Z–37 aircraft

omnirange navigation
USE VHF omnirange navigation

on–line programming
GS computer programming
. on–line programming

on–line systems
DEF Systems where the input data enters the computer directly from the point of origin and/or in which output data is transmitted directly to where it is used.
RT client server systems
computer programs
computer techniques
data management
data processing
information retrieval
information systems
integrated library systems
numerical data bases
∞ systems

onboard computers
USE airborne/spaceborne computers

onboard data processing
DEF Processing of acquired data aboard an aircraft, satellite, etc., rather than transmission to ground stations for processing.
GS data processing
. onboard data processing
RT airborne/spaceborne computers
∞ data
flight management systems
image processing
microprocessors
real time operation
signal processing

onboard equipment
GS onboard equipment
. airborne equipment
. . airborne/spaceborne computers
. . Light Airborne Multipurpose System
. . TERCOM
. airborne lasers
. aircraft equipment
. . bombing equipment
. . ejection seats

. . flying ejection seats
. . TERCOM
. spacecraft equipment
. . spacecraft electronic equipment
RT airborne surveillance radar
∞ aircraft
bubble technique
crew procedures (preflight)
∞ equipment
flight instruments
flight operations
flight safety
heating equipment
life support systems
lighting equipment
radar equipment
radio equipment
spacecraft instruments
stowage (onboard equipment)
survival equipment
telecommunication
∞ test equipment
training devices

one dimensional flow
GS fluid flow
. **one dimensional flow**
RT annular flow
axial flow
core flow
flow geometry
Hugoniot equation of state
three dimensional flow
two dimensional flow

one-phase flow
USE **single-phase flow**

onisotropy
USE **anisotropy**

Onsager phenomenological coefficient
GS coefficients
. **Onsager phenomenological coefficient**
RT flux density
plasmas (physics)
statistical mechanics
variational principles

Onsager relationship
RT ∞ equilibrium
irreversible processes
thermodynamics

Ontario
GS nations
. Canada
. . **Ontario**

ontogenesis
USE **ontogeny**

ontogeny
UF *ontogenesis*
RT biogeny
evolution (development)
growth
neurophysiology

oocytes
USE **gametocytes**

Oort cloud
DEF A region of millions of comets between 30,000 and 100,000 A.U. from the sun. Comets are perturbed out of the Oort cloud by passing stars and fall into the inner solar system. The Oort cloud was named after the Dutch astronomer, Jan Hendrik Oort.
RT ∞ clouds
comet nuclei
comets
Kuiper belt
Nemesis (star)
solar system

opacifiers
GS additives
. **opacifiers**
RT ∞ agents
fillers

opacity
DEF Of an optical path, the reciprocal of transmission.
GS electromagnetic properties
. optical properties
. . **opacity**
RT absorptance
absorptivity
acoustics
atmospheric optics
attenuation coefficients
clarity
density (mass/volume)
electromagnetic absorption
haze
Kramers–Kronig formula
light (visible radiation)
light transmission
refractivity
translucence
transmission efficiency
transmissivity
transparence
turbidity
underwater optics
visibility

opalescence
RT iridescence
optical properties

open channel flow
GS fluid flow
. internal flow
. . channel flow
. . . **open channel flow**
. liquid flow
. . **open channel flow**
RT cavity flow
laminar flow
meanders
pipe flow
turbulent flow
water flow

open circuit voltage
DEF The steady state or equilibrium potential of an electrode in absence of external current flow to or from the electrode.
GS potential energy
. electric potential
. . **open circuit voltage**
RT bias
capacitance
electrical properties
electrical resistivity
electromotive forces
energy conversion efficiency
overvoltage
∞ potential
power gain
short circuit currents
solar cells
static electricity
volt–ampere characteristics

open clusters
GS celestial bodies
. star clusters
. . **open clusters**
. . . Pleiades cluster
. . . Praesepe star clusters

OPEN Project
DEF A former NASA project now absorbed by the International Solar Terrestrial Physics Project. It proposed a simultaneous study of plasmas in the Earth's magnetosphere and neighborhood using the following four instrumented spacecraft: interplanetary physics laboratory (IPL), geomagnetic tail laboratory (GTL), polar plasma laboratory (PPL), and equatorial magnetosphere laboratory (EML). Used for Origin of Plasmas in Earth Neighborhood.
UF *Origin of Plasmas in Earth Neighborhood*
GS programs
. NASA programs
. . NASA space programs
. . . **OPEN Project**
. projects
. . **OPEN Project**
. space programs
. . NASA space programs
. . . **OPEN Project**
RT Earth atmosphere
Earth magnetosphere
plasma diagnostics
plasma physics
plasmasphere
satellite-borne instruments
space plasmas

openings
UF *cut-outs*
GS **openings**
. apertures
. . irises (mechanical apertures)
. . numerical aperture
. . synthetic apertures
. ports (openings)
. slits
RT annular ducts
cavities
cracks
curtains
doors
duct geometry
ducts
egress
exhaust nozzles
exhaust systems
gaps
gates (openings)
ingress (spacecraft passageway)
inlet nozzles
intake systems
orifices
outlets
passageways
perforated plates
pipe nozzles
slots
vents
windows (apertures)

operating costs
DEF The price for operating a system exclusive of the cost of the system itself.
GS costs

. **operating costs**
RT airline operations
economic analysis
energy policy
fuels
maintenance
production costs
systems analysis

operating systems (computers)
DEF Computer programs for expediting, controlling and/or recording computer use by other programs. Used for executive systems (computers).
UF *executive systems (computers)*
GS computer programs
. computer systems programs
. . **operating systems (computers)**
. . . **disk operating system (DOS)**
. . . UNIX (operating system)
RT assembler routines
compilers
computer information security
computer systems design
input/output routines
MIMD (computers)
∞ routines
SIMD (computers)
∞ systems
windows (computer programs)

operating temperature
GS temperature
. **operating temperature**
RT ambient **temperature**
combustion **temperature**
high temperature superconductors
room temperature
wall temperature

operational amplifiers
GS amplifiers
. **operational amplifiers**
RT amplifier design
analog circuits
analog computers
differential amplifiers
feedback amplifiers
linear integrated circuits
transistor amplifiers

operational calculus
RT ∞ applications of mathematics
calculus
calculus of variations
differential equations
Fourier analysis
integral calculus
linear equations

operational hazards
GS **hazards**
. **operational hazards**
RT air piracy
aircraft hazards
cumulative damage
flight hazards
meteoroid hazards
noise (sound)
occupational diseases
radiation hazards

operational problems
RT airline operations
∞ operations
∞ problems
systems engineering

∞ **operations**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT air drop operations
air traffic control
airline operations
chemical engineering
chemical reactions
clinical medicine
deployment
Fishbowl Operation
loading operations
mechanization
mission planning
operational problems
operations research
orifices
preflight operations
premature operation
production engineering
programs
projects
rescue operations
running
sequencing
strategy
surgery
systems engineering

operations research
GS optimization
. **operations research**
RT ∞ applications of mathematics
computer systems simulation
computerized simulation
constraints
control systems design
critical path method
decision theory
Delphi method (forecasting)
dynamic programming
experiment design
forecasting
functions (mathematics)
game theory
information theory
Lagrange multipliers
linear prediction
linear programming
management
management methods
management planning
mathematical models
mathematical programming
matrix management
minima
minimax technique
mission planning
multidisciplinary research
nonlinear programming
∞ operations
∞ paths
pattern method (forecasting)
probability theory
probe method (forecasting)
profile method (forecasting)
project planning
quality control
queueing theory
rand project
Rayleigh distribution
research and development
research management
risk
saddle points (game theory)
sequencing
simulation
statistical analysis
stochastic processes
strategy
∞ synthesis
synthesis (chemistry)
systems analysis
systems engineering
systems management
systems simulation
traveling salesman problem
urban development
war games

operator performance
GS human performance
. **operator performance**
RT astronaut performance
computer systems performance
mental performance
∞ performance
pilot performance
psychomotor performance

∞ **operators**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT operators (mathematics)
operators (personnel)
reactor cores

operators (mathematics)
UF *differential operators*
Fredholm operators
GS **operators (mathematics)**
. Bergman operator
. linear operators
RT functions (mathematics)
integral transformations
Laplace transformation
matrix theory
∞ operators
perturbation theory
S matrix theory

operators (personnel)
GS personnel
. **operators (personnel)**
. . pilots (personnel)
. . . aircraft pilots
. . . . test pilots
RT ∞ operators

Ophiuchi clouds
DEF Dense concentrations of interstellar gas near the stars Rho Ophiuchi and Zeta Ophiuchi.
RT cloud physics
∞ clouds
interstellar gas
interstellar matter
nebulae

ophthalmodynamometry
RT blood pressure
eye (anatomy)
vision

ophthalmology
GS medical science
. **ophthalmology**
RT electronystagmography
eye (anatomy)
eye diseases
eye examinations
miosis
vestibular nystagmus

Opik theory
RT nebulae
Orion constellation
Orion nebula
supernovas
∞ theories

optical absorption
USE **electromagnetic absorption**
light transmission

optical activity
DEF Ability to rotate the plane of vibration of polarized light to the right or left.
RT biochemistry
carbohydrates
chromophores
∞ optics
organic chemistry
polarimetry
polarized light
stereochemistry

optical amplifiers
USE **light amplifiers**

optical bistability
DEF A property of certain materials in which a nonlinear response is exhibited when under the influence of an external driving coherent light, thereby allowing these materials to behave like optical switches.
GS electromagnetic properties
. optical properties
. . **optical bistability**
RT four-wave mixing
hysteresis
integrated optics
light transmission
nonlinear optics
optical data storage materials
optical equipment
optical measuring instruments
optical memory (data storage)
optical switching
optical waveguides
switching circuits

optical communication
UF *laser communication*
light communication
optical signals
GS telecommunication
. communication
. . **optical communication**
RT dye lasers
ground-air-ground communication
high power lasers
interplanetary communication
lasers
lunar communication
optical fibers
∞ optics
polarization modulation
satellite communication
space communication
spacecraft communication
tunable lasers
visual signals
wireless communication

optical computers
DEF Computers which use light rather than electricity for all or part of their operation. They perform multiple tasks in parallel as opposed to electronic computers which would perform those tasks sequentially. Such increased processing capability makes them suited for aerospace problems which involve systems that have a large number of degrees of freedom, i.e., large space structures, pattern recognition activity, and robotics.
GS data processing equipment
. computers
. . **optical computers**
RT coherent light
computer design
electro-optics
optical data processing
optical equipment
optical memory (data storage)

optical control
(added September 1993)
DEF The control of light sensitive devices by means optical radiation.
RT automatic control
cascade control
∞ control
control equipment
controllers
electric control
electronic control
electro-optics
feedback control
optical equipment
remote control

optical correction procedure
GS correction
. **optical correction procedure**
procedures
. **optical correction procedure**
RT adaptive optics
adjusting
errors
honeycomb mirrors
instrument errors
lens design
∞ optics
photographic measurement
photographs
position errors
seeing (astronomy)
segmented mirrors
self focusing

optical correlators
(added March 1990)
GS correlators
. **optical correlators**
RT image correlators
optical data processing

optical countermeasures
DEF Equipment for exploiting the vulnerability of laser guided weapon systems.
GS countermeasures
. **optical countermeasures**
RT air defense
antimissile defense
deception
electronic countermeasures
military technology
missile defense
optical radar
∞ optics
space surveillance (spaceborne)

optical coupling
GS coupling
. electromagnetic coupling
. . **optical coupling**
RT couples
cross coupling
cross polarization
laser arrays
laser mode locking
light transmission
microwave coupling
numerical aperture
∞ optics
phase locked systems
polarization (waves)

optical data processing
GS data processing
. **optical data processing**
RT character recognition
∞ data
data acquisition
data processing equipment
gray scale
image classification
image processing
lasers
light modulators
light valves
optical computers
optical correlators
optical disks
optical relay systems
∞ optics
photonics
∞ processing
readers
scanners
tomography

optical data storage materials
GS optical materials
. **optical data storage materials**
RT ∞ data
data recording
data storage
laser applications
optical bistability
optical memory (data storage)
∞ optics
photographic film
video disks

optical density
DEF The image intensity or density in terms of, or measured by, a reflectance densitometer.
RT ∞ density
microddensitometers
∞ optics
translucence
transmittance
transparence
turbidity
underwater optics

optical depolarization
RT light (visible radiation)
∞ optics
polarized light

optical depth
USE **optical thickness**

optical disks
UF *compact disk read-only memory devices*
GS computer components
. computer storage devices
. . **optical disks**
RT CD-ROM
data storage
laser applications
optical data processing
optical equipment
optical memory (data storage)

video disks

optical emission
USE **light emission**

optical emission spectroscopy
GS **spectroscopy**
optical emission spectroscopy
laser spectroscopy
optogalvanic spectroscopy
RT auroral spectroscopy
electron spectroscopy
emission spectra
light (visible radiation)
∞ optics

optical equipment
GS **optical equipment**
binoculars
cameras
Baker–Nunn camera
ballistic cameras
CCD cameras
Delft camera
diffraction limited cameras
faint object camera
high speed cameras
framing cameras
I2S cameras
Lallemand cameras
multispectral band cameras
panoramic cameras
pinhole cameras
Schmidt cameras
streak cameras
television cameras
collimators
endoscopes
eyepieces
heliometers
pyroheliometers
image converters
celescopes
image tubes
thermicons
laser doppler velocimeters
optical gyroscopes
optical measuring instruments
cathetometers
diffractometers
Ebert spectrometers
ellipsometers
etalons
geodimeters
haploscopes
infrared spectrometers
filter wheel infrared spectrometers
light scattering meters
microdensitometers
nephelometers
oculometers
optical pyrometers
optical range finders
laser range finders
photogoniometers
photometers
electrophotometers
ultraviolet spectrometers
high dispersion spectrographs
Total Ozone Mapping Spectrometer
ultraviolet spectrophotometers
polarimeters
reflectometers
microwave reflectometers
refractometers
sextants
spectrophotometers
infrared spectrophotometers
ultraviolet spectrophotometers
transits
theodolites
cinetheodolites
transmissometers
optical microscopes
optical scanners
flying spot scanners
multispectral band scanners
thematic mappers (LANDSAT)
periscopes
photographic rectifiers
polariscopes
Senarmont polariscopes
prisms
scatter plates (optics)
spectroheliographs
stroboscopes
wide angle lenses
RT absorption spectroscopy
acoustic microscopes
circumsolar telescopes
densitometers
Fabry–Perot spectrometers
geometrical optics
horizon scanners
infrared interferometers
infrared scanners
interferometers
lenses
look angles (electronics)
Mach–Zehnder interferometers
microchannels
microscopes
mirrors
monochromators
optical bistability
optical computers
optical control
optical disks
∞ optics
optogalvanic spectroscopy
photographic equipment
radio telescopes
reflecting telescopes
refracting telescopes
reticles
Scanner project
scanners
spectrometers
telescopes
tripods
video equipment

optical fibers
GS fibers
optical fibers
scintillating fibers
optical materials
optical fibers
scintillating fibers
waveguides
optical waveguides
optical fibers
scintillating fibers
RT Bragg gratings
communication cables
fiber lasers
fiber optics
fly by light control
glass fibers
numerical aperture
optical communication
plastic fibers
transmission lines

optical filters
GS electromagnetic wave filters
optical filters
birefringent filters
infrared filters
ultraviolet filters
RT adaptive filters
bandpass filters
bandstop filters
Bragg gratings
diaphragms (mechanics)
didymium
electric filters
filtergrams
∞ filters
∞ gratings
gratings (spectra)
high pass filters
lenses
low pass filters
optical relay systems
∞ optics
photographic equipment
photographic film
Rowland circles
sunglasses
transmission
tunable filters

optical flow (image analysis)
(added May 1993)
RT computer vision
image analysis
image processing
∞ optics
scene analysis
three dimensional motion

optical generators
USE **laser cavities**

optical gyroscopes
GS gyroscopes
optical gyroscopes
optical equipment
optical gyroscopes
RT laser gyroscopes
∞ optics
Sagnac effect

optical heterodyning
GS heterodyning
optical heterodyning
RT Doppler effect
light modulation
∞ optics

optical illusion
GS psychological effects
illusions
optical illusion
elevator illusion
RT moon illusion
∞ optics

optical images
USE **images**

optical maser modulation
USE **light modulation**

optical masers
USE **lasers**

optical materials
(added September 1988)
GS **optical materials**

. glass fibers
. optical data storage materials
. optical fibers
. . scintillating fibers
RT aspheric optics
chromophores
glass
infrared windows
lenses
∞ materials
mirrors
windows (apertures)

optical measurement
SN (MEASUREMENTS OF OPTICAL PROPERTIES, QUANTITIES OR CONDITIONS)
GS **optical measurement**
. colorimetry
. optometry
. photometry
. . astronomical photometry
. . . stellar spectrophotometry
. . electrophotometry
. . infrared photometry
. . spectrophotometry
. . . stellar spectrophotometry
. . telephotometry
. . ultraviolet photometry
. . visual photometry
. polarimetry
. . astronomical polarimetry
RT chemical analysis
collimators
densitometers
diffractometers
electro-optical photography
ellipsometry
emissivity
etalons
Faraday effect
gamma ray spectrometers
geoflexmeters
geometrical optics
grazing incidence
in situ measurement
infrared interferometers
interferometers
light (visible radiation)
∞ measurement
microdensitometers
modulation transfer function
nephelometers
nonintrusive measurement
∞ optics
phase contrast
photographic measurement
photometers
polarimeters
ray tracing
reflectance
reflectometers
refractometers
Ronchi test
spectral signatures
spectrometers
spectrophotometers
stroboscopes

optical measuring instruments
SN (INSTRUMENTS UTILIZING OPTICAL PRINCIPLES FOR MEASUREMENT)
UF *optical sensors*
GS measuring instruments
. **optical measuring instruments**
. . cathetometers
. . diffractometers
. . Ebert spectrometers
. . ellipsometers
. . etalons
. . geodimeters
. . haploscopes
. . infrared spectrometers
. . . filter wheel infrared spectrometers
. . light scattering meters
. . microdensitometers
. . nephelometers
. . oculometers
. . optical pyrometers
. . optical range finders
. . . laser range finders
. . photogoniometers
. . photometers
. . . electrophotometers
. . . ultraviolet spectrometers
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping Spectrometer
. . . ultraviolet spectrophotometers
. . polarimeters
. . reflectometers
. . . microwave reflectometers
. . refractometers
. . sextants
. . spectrophotometers
. . . infrared spectrophotometers
. . . ultraviolet spectrophotometers
. . transits
. . . theodolites
. . . . cinetheodolites
. . transmissometers
optical equipment
. **optical measuring instruments**
. . cathetometers
. . diffractometers
. . Ebert spectrometers
. . ellipsometers
. . etalons
. . geodimeters
. . haploscopes
. . infrared spectrometers
. . . filter wheel infrared spectrometers
. . light scattering meters
. . microdensitometers
. . nephelometers
. . oculometers
. . optical pyrometers
. . optical range finders
. . . laser range finders
. . photogoniometers
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. . polarimeters
. . reflectometers
. . . microwave reflectometers
. . refractometers
. . sextants
. . spectrophotometers
. . . infrared spectrophotometers
. . . ultraviolet spectrophotometers
. . transits
. . . theodolites
. . . . cinetheodolites
. . transmissometers
RT absorption spectroscopy
cinespectrographs
colorimetry
densitometers
Fabry-Perot spectrometers
faint object camera
goniometers
guidance sensors
infrared interferometers
interferometers
laser doppler velocimeters
Mach-Zehnder interferometers
microscopes
Miros system
monochromators
multispectral tracking telescopes
optical bistability
∞ optics
optogalvanic spectroscopy
periscopes
polarimetry
polariscopes
radiation measuring instruments
reflecting telescopes
refracting telescopes
self focusing
Senarmont polariscopes
solar instruments
telephotometry
telescopes

optical memory (data storage)
RT CD-ROM
coherent light
computer storage devices
∞ data
holography
lasers
optical bistability
optical computers
optical data storage materials
optical disks
∞ optics
video disks

optical methods
USE **optics**

optical microscopes
GS microscopes
. **optical microscopes**
optical equipment
. **optical microscopes**
RT electron microscopes
∞ optics

optical modulation
USE **light modulation**

optical paths
DEF Lines of sight or the paths followed by rays of light through optical systems.
RT diffraction paths
geometrical optics
holographic optical elements
multipath transmission
∞ optics
∞ paths
phase contrast
photon beams
Sagnac effect
underwater optics
Voigt effect
wave dispersion

optical polarization
RT circular polarization
linear polarization
optical properties
∞ optics
∞ polarization
polarization modulation
polarized light

polarizers
polarography

optical properties
SN (INCLUDES PROPERTIES AND EFFECTS OF VISIBLE, INFRARED AND ULTRAVIOLET ELECTROMAGNETIC WAVES)
GS electromagnetic properties
. **optical properties**
. . absorptance
. . absorptivity
. . birefringence
. . . Kerr electrooptical effect
. . brightness
. . . sky brightness
. . brightness distribution
. . color
. . . iridescence
. . . stellar color
. . . water color
. . dichroism
. . luminosity
. . . stellar luminosity
. . opacity
. . optical bistability
. . optical reflection
. . phosphorescence
. . photoconductivity
. . photoviscoelasticity
. . radiance
. . reflectance
. . . bidirectional reflectance
. . . spectral reflectance
. . refractivity
. . . photorefractivity
. . stigmatism
. . translucence
. . transmissivity
. . transmittance
. . transparence
. . turbidity
RT acousto-optics
albedo
birefringent filters
clarity
coefficients
coherent radiation
cross polarization
darkness
diffraction
electrical properties
electromagnetic absorption
emittance
excitons
Faraday effect
geometrical optics
glare
glass
gradient index optics
haze
infrared absorption
isotropy
Kerr magnetooptical effect
light (visible radiation)
light transmission
lumens
luminance
lunar albedo
metallic glasses
numerical aperture
opalescence
optical polarization
∞ optics
∞ orientation
photoelectricity
photons
phototropism
physical optics
∞ physical properties
polarization (waves)
∞ properties
∞ solid state physics
surface properties
thermochromatic materials
thermodynamic properties
visibility
wave dispersion

optical pumping
GS **optical pumping**
. laser pumping
RT electron pumping
electron-hole drops
excimer lasers
fiber lasers
gamma ray lasers
glass lasers
HCN lasers
krypton fluoride lasers
laser cooling
laser propulsion
lasers
maser pumping
metal vapor lasers
neodymium lasers
nuclear pumped lasers
nuclear pumping
∞ optics
pulse repetition rate
∞ pumping
rare gas-halide lasers
solar-pumped lasers
stimulated emission
stimulated emission devices

optical pyrometers
DEF Devices for measuring the temperature of an incandescent radiating body by comparing its brightness for a selected wavelength interval within the visible spectrum with that of a standard source, a monochromatic radiation pyrometer.
GS measuring instruments
. optical measuring instruments
. . **optical pyrometers**
. temperature measuring instruments
. . **optical pyrometers**
optical equipment
. optical measuring instruments
. . **optical pyrometers**
RT∞ optics
radiation pyrometers

optical radar
UF *laser radar*
lidar
GS radar
. **optical radar**
. . differential absorption lidar
RT infrared radar
laser altimeters
laser applications
optical countermeasures
∞ optics
over-the-horizon radar
radar detection

optical range finders
GS measuring instruments
. distance measuring equipment
. . range finders
. . . **optical range finders**
. . . . laser range finders
. optical measuring instruments
. . **optical range finders**
. . . laser range finders
optical equipment
. optical measuring instruments
. . **optical range finders**
. . . laser range finders
RT lunar rangefinding
∞ optics

optical reflection
GS electromagnetic properties
. optical properties
. . **optical reflection**
reflection
. **optical reflection**
RT antireflection coatings
electromagnetic absorption
geometrical optics
incident radiation
infrared reflection
light transmission
∞ optics
reflectance
reflected waves
spread reflection

optical relay systems
DEF Systems using photocouplers in which the output device is a light sensitive switch that provides the same on and off operations as the contacts of a relay.
RT electro-optics
imaging techniques
laser applications
optical data processing
optical filters
optical resonators
optical switching
∞ optics
pattern recognition
∞ systems

optical resonance
GS emission
. light emission
. . luminescence
. . . **optical resonance**
resonance
. **optical resonance**
RT nuclear pumped lasers
∞ optics
plasma radiation
plasma spectra
resonance lines
spectrum analysis

optical resonators
GS resonators
. **optical resonators**
RT field mode theory
laser modes
laser outputs
lasers
light modulation
mirrors
optical relay systems
∞ optics

optical satellite tracking program
RT∞ optics
satellite tracking

optical scanners
DEF A light source and phototube combined as a single unit for scanning moving strips of paper or other materials in photoelectric side-register control systems.
GS optical equipment

. **optical scanners**
. . flying spot scanners
. . multispectral band scanners
. . . thematic mappers (LANDSAT)
scanners
. **optical scanners**
. . flying spot scanners
. . multispectral band scanners
. . . thematic mappers (LANDSAT)
RT character recognition
data acquisition
monitors
∞ optics
photon beams
readers
television cameras

optical sensors
USE **optical measuring instruments**

optical signals
USE **optical communication**

optical slant range
DEF The horizontal distance in a homogeneous atmosphere for which the attenuation is the same as that actually encountered along the true oblique path.
GS distance
. **optical slant range**
RT ∞ optics
radar range

optical spectrum
USE **light (visible radiation)**
spectra

optical switching
UF *electro-optical switching*
optoelectronic switching
photonic switching
GS switching
. **optical switching**
RT acousto-optics
asynchronous transfer mode
electro-optics
integrated optics
light modulation
magneto-optics
optical bistability
optical relay systems
optoelectronic devices
photonics
semiconductor lasers
switching circuits

optical thickness
DEF Specifically, in calculations of the transfer of radiant energy, the mass of a given absorbing or emitting material lying in a vertical column of unit cross sectional area and extending between two specific levels. Used for optical depth.
UF *optical depth*
RT antireflection coatings
Fermat principle
∞ optics
refractivity
thickness

optical tracking
UF *visual tracking*
GS tracking (position)
. **optical tracking**
RT ballistic cameras
boresight error
borosights
compensatory tracking
Global Tracking Network
infrared tracking
minitrack system
multiple target tracking
multispectral tracking telescopes
oculometers
∞ optics
photographic tracking
range and range rate tracking
space detection and tracking system
spacecraft tracking
STDN (network)

optical transfer function
UF *OTF*
GS functions (mathematics)
. transfer functions
. . **optical transfer function**
RT adaptive optics
cost analysis
figure of merit
imaging techniques
modulation transfer function
∞ optics
∞ performance
spaceborne telescopes
system effectiveness
systems analysis
systems engineering
telescopes

optical transition
RT electron transitions
emission spectra
Franck-Condon principle
lasing
luminescence
∞ optics

optical waveguides
DEF Any device or component that guides optical energy.
GS . waveguides
. **optical waveguides**
. . . optical fibers
. . . . scintillating fibers
RT integrated optics
laser outputs
light beams
light transmission
optical bistability
∞ optics
photonics
photorefractivity
. waveguide lasers

∞ **optics**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *optical methods*
RT acousto-optics
adaptive optics
angular resolution
aspheric optics
asphericity
astigmatism
atmospheric optics
Cassegrain optics
caustics (optics)
chromophores
crystal optics
defocusing
diffraction patterns
diffraction propagation
diffractive optics
electron optics
electro-optical effect
electro-optical photography
electro-optics
fiber optics
foci
Fresnel lenses
geometrical optics
gradient index optics
Huygens principle
images
imaging techniques
integrated optics
laser cavities
lasers
lens design
lenses
light (visible radiation)
light amplifiers
light emission
light modulation
magneto-optics
mirrors
nonlinear optics
optical activity
optical communication
optical correction procedure
optical countermeasures
optical coupling
optical data processing
optical data storage materials
optical density
optical depolarization
optical emission spectroscopy
optical equipment
optical filters
optical flow (image analysis)
optical gyroscopes
optical heterodyning
optical illusion
optical measurement
optical measuring instruments
optical memory (data storage)
optical microscopes
optical paths
optical polarization
optical properties
optical pumping
optical pyrometers
optical radar
optical range finders
optical reflection
optical relay systems
optical resonance
optical resonators
optical satellite tracking program
optical scanners
optical slant range
optical thickness
optical tracking
optical transfer function
optical transition
optical waveguides
parallax
photics
photoelastic analysis
physical optics
prefocusing
quantum optics
reflection
resolution
scatter plates (optics)
∞ science
Snells law
spectroscopy
squeezed states (quantum theory)
Starlab
underwater optics

x ray optics

optimal control
UF *optimum control*
GS automatic control
. **optimal control**
. . H–infinity control
. . linear quadratic Gaussian control
. . time optimal control
optimization
. **optimal control**
. . H–infinity control
. . linear quadratic Gaussian control
. . time optimal control
RT adaptive control
∞ control
control systems design
control theory
feedback control
feedforward control
genetic algorithms
inventory controls
Kalman–Schmidt filtering
linear quadratic regulator
model reference adaptive control
multivariable control
parameter identification
tracking problem
trajectory control

optimization
DEF The procedure used in the design of a system to maximize or minimize some performance index. May entail the selection of a component, a principle of operation, or a technique.
UF *minimization*
reduction (mathematics)
GS **optimization**
. flight optimization
. genetic algorithms
. linear quadratic regulator
. . linear quadratic Gaussian control
. mathematical programming
. . dynamic programming
. . linear programming
. . nonlinear programming
. . quadratic programming
. multidisciplinary design optimization
. operations research
optimal control
. H–infinity control
. linear quadratic Gaussian control
. time optimal control
. simplex method
. trajectory optimization
RT ∞ applications of mathematics
Bellman theory
Bolza problems
constraints
correlation
∞ design
design analysis
differential calculus
efficiency
extremum values
gradients
Hessian matrices
Kalman filters
Kalman–Schmidt filtering
Lagrange multipliers
least squares method
maxima
minima
parameter identification
penalty function
planning
pontryagin principle
quality control
range (extremes)
∞ reduction
scheduling
simulated annealing
static models
steepest descent method
stopping
system identification
trajectory control
Wiener filtering

optimum control
USE **optimal control**

optimum thrust programming
USE **thrust programming**

options
RT alternatives
contracts
selection
site selection
subcontracts

optoelectronic devices
DEF Electronic devices combining optic and electric parts.
GS **optoelectronic devices**
. light emitting diodes
. photodiodes
. phototransistors
RT electro–optics
fiber optics
integrated circuits
integrated optics
optical switching
photonics

optoelectronic switching
USE **optical switching**

optogalvanic spectroscopy
DEF A method of obtaining absorption spectra of atomic and molecular species in flames and electrical discharges by measuring voltage and current changes upon laser irradiation.
GS spectroscopy
. absorption spectroscopy
. . **optogalvanic spectroscopy**
. optical emission spectroscopy
. . laser spectroscopy
. . . **optogalvanic spectroscopy**
utilization
. laser applications
. . laser spectroscopy
. . . **optogalvanic spectroscopy**
RT flame spectroscopy
Fraunhofer lines
gas spectroscopy
infrared spectroscopy
molecular spectroscopy
optical equipment
optical measuring instruments
Raman spectroscopy
ultraviolet spectroscopy
volt–ampere characteristics

optometry
GS optical measurement
. **optometry**
RT anastigmatism
blindness
eye (anatomy)
haploscopes
∞ measurement
medical science
vision

OR–gates
USE **gates (circuits)**

oral hygiene
GS hygiene
. **oral hygiene**
RT cleanliness
dentistry
health
public health
teeth
tooth diseases

oratory
USE **public speaking**

ORBIS
UF *orbiting radio beacon ionospheric sounder*
GS artificial satellites
. scientific satellites
. . **ORBIS**
. . . ORBIS CAL satellite
RT ionospheric propagation
ionospheric sounding
radio beacons

ORBIS CAL satellite
GS artificial satellites
. gravity gradient satellites
. . **ORBIS CAL satellite**
. scientific satellites
. . ORBIS
. . . **ORBIS CAL satellite**
RT ionospheric propagation
ionospheric sounding
radio beacons

orbit calculation
UF *satellite orbit calculation*
GS computation
. **orbit calculation**
. . minimum variance orbit determination
RT flight mechanics
Goddard Trajectory Determination System
orbital elements
orbital mechanics
orbital position estimation
orbital resonances (celestial mechanics)
quadratures

orbit decay
RT aerod[illegible] drag
atmosp[illegible]y
flight mecr[illegible]
orbital mechanics
satellite lifetime
spacecraft breakup

orbit equations
USE **orbital mechanics**

orbit insertion
(added January 1991)
DEF The process by which a spacecraft enters into a desired orbit around a celestial body.
GS insertion
. **orbit insertion**
RT ascent trajectories
orbital maneuvers
orbital mechanics
payload delivery (STS)
satellite orbits
spacecraft launching

spacecraft maneuvers
spacecraft orbits
transfer orbits

Orbit Maneuvering Engine (Space Shuttle)
UF *OME*
GS engines
. rocket engines
. . microrocket engines
. . . **Orbit Maneuvering Engine (Space Shuttle)**
RT Aeromaneuvering Orbit to Orbit Shuttle
orbital maneuvers
space shuttles

orbit perturbation
UF *evection*
GS perturbation
. **orbit perturbation**
. . satellite perturbation
RT drift rate
long term effects
lunar effects
orbital elements
orbital mechanics
orbital resonances (celestial mechanics)
perturbation theory
Schach effect
Vinti theory

orbit spectrum utilization
DEF Telecommunication techniques in spectrum conservation for reducing user costs.
RT communication satellites
frequency assignment
radio relay systems
satellite orbits
systems engineering
television systems

orbit transfer vehicles
DEF Concept of propulsive (velocity producing) rockets or stages for use with crew transfer modules, manned sortie modules, or other payloads. Used for OTV.
UF *OTV*
GS **orbit transfer vehicles**
. Aeromaneuvering Orbit to Orbit Shuttle
RT Inertial Upper Stage
orbital maneuvering vehicles
orbital servicing
payload delivery (STS)
payload deployment & retrieval system
payload retrieval (STS)
space shuttles
space transportation
space tugs
∞ spacecraft
∞ vehicles

orbital assembly
UF *construction in space*
spacecraft orbital assembly
GS assembling
. **orbital assembly**
RT expandable structures
inflatable spacecraft
self erecting devices
space erectable structures
Space Operations Center (NASA)
space station structures
spacecraft modules
spacecraft structures

orbital breakup
USE **spacecraft breakup**

orbital elements
DEF A set of seven parameters defining the orbit of a body attracted by a central, inverse square force.
RT apsides
∞ elements
orbit calculation
orbit perturbation
orbits
perihelions
perturbation theory

Orbital Flight Test 1 (shuttle)
USE **Space Transportation System 1 flight**

Orbital Flight Test 2 (shuttle)
USE **Space Transportation System 2 flight**

Orbital Flight Test 3 (shuttle)
USE **Space Transportation System 3 flight**

Orbital Flight Test 4 (shuttle)
USE **Space Transportation System 4 flight**

orbital flight tests (shuttle)
USE **Space Transportation System flights**

orbital launching
SN (LAUNCHING FROM AN ORBIT—EXCLUDES LAUNCHING INTO ORBIT FROM GROUND)
GS launching
. rocket launching
. . **orbital launching**
RT interplanetary trajectories
lunar launch
payload delivery (STS)
spacecraft launching
transfer orbits

orbital lifetime
DEF The predicted lifetime of a satellite in orbit, usually based on such criteria as solar flux density, atmospheric density, the lessening of the eccentricity of elliptical orbits, or the gravitational effects of the sun or the moon.
RT attitude control
Earth orbits

orbital maneuvering vehicles
RT orbit transfer vehicles
orbital servicing
power modules (STS)
remotely piloted vehicles
∞ spacecraft

orbital maneuvers
GS maneuvers
. spacecraft maneuvers
. . **orbital maneuvers**
RT orbit insertion
Orbit Maneuvering Engine (Space Shuttle)
space navigation
space shuttles

orbital mechanics
UF *orbit equations*
GS classical mechanics
. space mechanics
. . **orbital mechanics**
. . . Kepler laws
. . . minimum variance orbit determination
RT Aeromaneuvering Orbit to Orbit Shuttle
apsides
astrodynamics
celestial mechanics
circular orbits
drift rate
Earth orbital rendezvous
Earth orbits
Earth–Mars trajectories
Earth–Mercury trajectories
Earth–Moon system
elliptical orbits
equatorial orbits
flight mechanics
flight optimization
Goddard Trajectory Determination System
Hansen lunar theory
Hill lunar theory
Hill method
interplanetary trajectories
interplanetary transfer orbits
Lagrangian equilibrium points
low earth orbits
lunar orbital rendezvous
lunar orbits
many body problem
∞ mechanics (physics)
moon–Earth trajectories
orbit calculation
orbit decay
orbit insertion
orbit perturbation
orbital resonances (celestial mechanics)
orbits
parking orbits
perturbation
planetary landing
Poynting–Robertson effect
quadratures
rendezvous
rendezvous trajectories
retrograde orbits
round trip trajectories
satellite orbits
satellite perturbation
space navigation
spacecraft orbits
stationkeeping
swingby technique
thrust programming
trajectory analysis
transearth injection
transfer orbits
translunar injection
twenty-four hour orbits
two body problem

orbital motion
USE **orbits**

orbital position estimation
GS estimating
. **orbital position estimation**
RT celestial sphere
Goddard Trajectory Determination System
navigation
orbit calculation
∞ orientation
position (location)
position errors
∞ range
satellite orbits
spacecraft orbits
spacecraft position indicators
state estimation

orbital rendezvous
UF *satellite rendezvous*
GS maneuvers
. **orbital rendezvous**
. . Earth orbital rendezvous
. . lunar orbital rendezvous
rendezvous
. space rendezvous
. . **orbital rendezvous**
. . . Earth orbital rendezvous
. . . lunar orbital rendezvous
RT Atlas launch vehicles
multiple docking adapters
payload retrieval (STS)
rendezvous guidance
rendezvous spacecraft
rendezvous trajectories
spacecraft docking
spacecraft trajectories
tethering

orbital resonances (celestial mechanics)
DEF Systems of two or more satellites (including planets) that orbit the same primary and whose orbital mean motions are in a ratio of small whole numbers.
GS resonance
. **orbital resonances (celestial mechanics)**
RT astrodynamics
celestial mechanics
gravitational effects
libration
librational motion
orbit calculation
orbit perturbation
orbital mechanics
oscillations
planetary orbits
planetary systems
satellite orbits
solar orbits

orbital servicing
DEF The replenishing of propellants, pressurants, coolants, and the replacement of modules and experiments, during some phase of a spacecraft flight to extend the mission and lifetime, or change the payloads.
UF *satellite repair*
RT Columbus space station
large space structures
man tended free flyers
manned maneuvering units
orbit transfer vehicles
orbital maneuvering vehicles
payload transfer
Space Operations Center (NASA)
space platforms
Space Shuttle payloads
Space Station Freedom
space stations
space transportation system
space tugs
telerobotics

orbital shots
RT∞ shot
spacecraft launching

orbital simulators
USE **space simulators**

orbital space tests
RT CRRES (satellite)
environmental tests
large space structures
space mechanics
space stations
structural analysis
∞ **tests**

Orbital Test Satellite (ESA)
USE **OTS (ESA)**

orbital transfer
USE **transfer orbits**

orbital velocity
DEF The average velocity at which an Earth satellite or other orbiting body travel around its primary. The velocity of such a body at any given point in its orbit, i.e., orbital velocity at the apogee is less than at the perigee.
GS rates (per time)
. **orbital velocity**
velocity
. **orbital velocity**
RT angular velocity
escape velocity
∞ hypervelocity
velocity errors

orbital workers
GS personnel
. flying personnel
. . astronauts
. . . **orbital workers**
RT astronaut locomotion
extravehicular activity
space maintenance
space tools
work capacity

orbital workshops
GS artificial satellites
. **orbital workshops**
. . Saturn workshops
. . . Saturn 1 workshop
. . . Saturn 5 workshop
. . Skylab 1
. . Skylab 2
. . Skylab 3
. . Skylab 4
manned spacecraft
. **orbital workshops**
. . Saturn workshops
. . . Saturn 1 workshop
. . . Saturn 5 workshop
. . Skylab 1
. . Skylab 2
. . Skylab 3
. . Skylab 4
RT Apollo extension system
containerless melts
manned orbital laboratories
Skylab program
space laboratories
space processing
space stations

orbitals
GS **orbitals**
. electron orbitals
. molecular orbitals
. Slater orbitals
RT Jahn-Teller effect
orbits
Schwarzschild metric

Orbiting Astronomical Observatory
USE **OAO**

orbiting dipoles
GS electric charge
. electric dipoles
. . **orbiting dipoles**
RT communication equipment
∞ dipoles

Orbiting Frog Otolith
GS artificial satellites
. biosatellites
. . **Orbiting Frog Otolith**
spaceborne experiments
. **Orbiting Frog Otolith**
RT biological effects
biometrics
biotelemetry
instrument packages
international cooperation
Italian space program
otolith organs

Orbiting Geophysical Observatory
USE **OGO**

orbiting lunar stations
GS artificial satellites
. lunar satellites
. . **orbiting lunar stations**
. space stations
. . **orbiting lunar stations**
lunar spacecraft
. lunar satellites
. . **orbiting lunar stations**
stations
. space stations
. . **orbiting lunar stations**
RT lunar bases
∞ spacecraft

orbiting radio beacon ionospheric sounder
USE **ORBIS**

Orbiting Solar Observatory
USE **OSO**

orbitrons
RT electron clouds
electron tubes
ionization gages
space charge
vacuum gages

orbits
DEF The paths of bodies or particles under the influence of a gravitational or other force. Used for orbital motion and periodic orbits.
UF *orbital motion*
periodic orbits
GS **orbits**
. circular orbits
. . stationary orbits
. Earth orbits
. . geosynchronous orbits
. . low earth orbits
. . twenty-four hour orbits
. eccentric orbits
. elliptical orbits
. . transfer orbits
. . . interplanetary transfer orbits
. equatorial orbits
. . stationary orbits
. lunar orbits
. planetary orbits
. retrograde orbits
. solar orbits
. spacecraft orbits
. . satellite orbits
. . . geosynchronous orbits
. . . parking orbits
. . . polar orbits
. . . stationary orbits

twenty-four hour orbits
transfer orbits
interplanetary transfer orbits
Trojan orbits
stellar orbits
RT airborne range and orbit determination
apexes
aphelions
apogees
artificial satellites
astrodynamics
celestial bodies
celestial mechanics
∞ conjunction
Earth–Venus trajectories
ephemerides
flight optimization
flight paths
four body problem
ground tracks
∞ inclination
interplanetary flight
lunar flight
many body problem
∞ motion
orbital elements
orbital mechanics
orbitals
∞ paths
perigees
perihelions
quadratures
Roche limit
satellite ground tracks
Schwarzschild metric
space flight
space navigation
spacecraft guidance
stationkeeping
suborbital flight
three body problem
trajectories
two body problem

orchards
RT agriculture
blight
citrus trees
crop growth
crop vigor
∞ crops
curing
farm crops
∞ food
frost damage
fruits
irrigation
nuts (fruits)
plants (botany)
rural land use
silviculture
trees (plants)

order–disorder transformations
RT atomic structure
cluster variation method
crystal defects
crystal lattices
crystal structure
crystallography
holes (electron deficiencies)
metallography
microstructure
molecular structure
phase transformations
solid solutions
∞ transformations

ordnance
RT air to surface missiles
ammunition
armor
ballistics
explosives
ground support equipment
pyrotechnics
tanks (combat vehicles)
trajectories
warfare
weapon systems
weapons

Oregon
GS nations
United States
Oregon
RT Cascade Range (CA–OR–WA)
Columbia River Basin (ID–OR–WA)

ores
USE **minerals**

organ weight
GS weight (mass)
organ weight

organelles
GS **organelles**
chloroplasts
endoplasmic reticulum
sarcoplasmic reticulum
lysosomes
mitochondria
nuclei (cytology)
RT cells (biology)
cytology
cytoplasm

organic aluminum compounds
GS aluminum compounds
organic aluminum compounds
organometallic compounds
organic aluminum compounds
RT ∞ chemical compounds
∞ metal compounds

organic boron compounds
GS boron compounds
organic boron compounds
organic compounds
organic boron compounds
RT ∞ chemical compounds

organic charge transfer salts
DEF Organic compounds exhibiting temperature-dependent electrical, magnetic, and heat transfer properties.
GS organic compounds
organic charge transfer salts
RT charge transfer devices
organic superconductors
∞ **salts**
semiconductors (materials)

organic chemistry
RT biochemistry
∞ chemistry
cracking (chemical engineering)
cyclic compounds
Diels–Alder reactions
histochemical analysis
methoxy systems
optical activity
physiochemistry

organic compounds
GS **organic compounds**

acetyl compounds
acetylacetone
acetylsalicylic acid
amino acids
alanine
phenylalanine
aspartic acid
cysteine
dopa
folic acid
glutamic acid
glutamine
glycine
hippuric acid
histidine
leucine
norleucine
lysine
melanoidin
methionine
thyroxine
tryptophan
tyrosine
carbohydrates
citric acid
glucosides
nucleosides
adenines
guanosines
polysaccharides
cellulose
Fortisan (trademark)
chitin
dextrans
glycogens
starches
sugars
dextrans
inositols
lactose
mannitol
monosaccharides
hexoses
galactose
glucose
pentose
ribose
xylose
sucrose
carboxylic acids
acrylic acid
alanine
phenylalanine
aspartic acid
citric acid
dicarboxylic acids
fatty acids
acetic acid
ethylenediaminetetraacetic acids
iodoacetic acid
acetylsalicylic acid
benzilic acid
benzoic acid
lipoic acid
oleic acid
palmitic acid
propionic acid
sebacic acid
valeric acid
folic acid
formhydroxamic acid
formic acid
Hexogenes (trademark)
lactic acid
lysine
nicotinic acid

- oxalic acid
- oxamic acids
- tryptophan
- choline
- coenzymes
  - adenosine diphosphate
  - adenosine triphosphate
  - cyclic AMP
  - glutathione
  - thiamine
- cyclic compounds
  - cyclic hydrocarbons
    - anthracene
    - benzene
    - chlorobenzenes
    - colchicine
    - cyclobutane
    - cyclohexane
    - cyclopropane
    - durene
    - indene
    - menthol
    - naphthalene
    - naphthenes
    - polycyclic aromatic hydrocarbons
  - heterocyclic compounds
    - acriflavine
    - adenosines
      - adenosine diphosphate
      - adenosine triphosphate
      - cyclic AMP
    - alkaloids
      - atropine
      - betaines
      - caffeine
      - colchicine
      - ergotamine
      - hyoscine
      - lysergine
      - morphine
      - nicotinamide
      - nicotine
      - pilocarpine
      - reserpine
      - strychnine
      - tropyl compounds
    - anisole
    - ascorbic acid
    - azines
      - cyanurates
      - cyanuric acid
      - meclizine
      - methylene blue
      - phenothiazines
    - azoles
      - acetazolamide
      - oxazole
      - pyrroles
        - carbazoles
          - indoles
            - tryptophan
    - azulene
    - bioflavonoids
    - biotin
    - carnitine
    - cyanocobalamin
    - cytidylic acid
    - dimenhydrinate
    - endrin
    - ethylene oxide
    - folic acid
    - furans
      - tetrahydrofuran
    - guanethidine
    - HMX
    - nicotinic acid
    - phthalocyanin
    - phylloquinone
    - piperidine
    - promethazine
    - purines
      - adenines
      - xanthines
        - caffeine
        - guaninas
        - uric acid
    - pyridines
    - pyridoxine
    - pyrimidines
      - alloxan
      - thymidine
      - thymine
      - uracil
    - RDX
    - retinene
    - riboflavin
    - tetracyclines
    - tetrazoles
    - thiamine
    - thiazine (trademark)
    - thiophenes
    - tocopherol
    - trimethadione
    - rhodamine
  - diethyl compounds
    - diethyl ether
    - diethyl hydrogen phosphite (DEHP)
  - dimethyl compounds
    - dimethylhydrazines
  - fluorine organic compounds
    - fluoroamines
      - nitrofluoroamines
      - trifluoroamine oxide
    - fluorocarbons
    - fluorohydrocarbons
      - carbon tetrafluoride
      - chlorofluoromethane
      - polytetrafluoroethylene
        - teflon (trademark)
    - fluoropolymers
      - polytetrafluoroethylene
        - teflon (trademark)
      - KEL-F
      - polyvinyl fluoride
    - perfluoroalkane
    - perfluoroguanidine
  - hydrocarbons
    - aliphatic hydrocarbons
      - alkanes
        - butanes
        - cetane
        - ethane
        - heptanes
        - methane
        - nitropropane
        - nonanes
        - octanes
        - paraffins
          - ceresin
        - pentanes
          - neopentane
        - propane
      - alkenes
        - butenes
        - ethylene
          - vinylidene
        - hexenes
        - propylene
        - trienes
      - alkynes
        - acetylene
        - oxyacetylene
    - dienes
      - butadiene
      - heptadiene
      - hexadiene
      - polybutadiene
    - carotene
    - cubane
    - cyanoacetylene
    - cyclic hydrocarbons
      - anthracene
      - benzene
      - chlorobenzenes
      - colchicine
      - cyclobutane
      - cyclohexane
      - cyclopropane
      - durene
      - indene
      - menthol
      - naphthalene
      - naphthenes
      - polycyclic aromatic hydrocarbons
    - diphenyl compounds
      - diphenyl hydantoin
    - fluorohydrocarbons
      - carbon tetrafluoride
      - chlorofluoromethane
      - polytetrafluoroethylene
        - teflon (trademark)
    - mesitylene
    - methylene
    - methylidyne
    - natural gas
      - liquefied natural gas
    - phenanthrene
    - pyrenes
    - quinoxalines
    - stilbene
    - toluene
    - triphenyls
    - xylene
  - kerogen
  - lead organic compounds
    - lead acetates
  - lipids
    - calciferol
    - castor oil
    - fats
    - lipoproteins
    - phylloquinone
    - retinene
    - steroids
      - cholesterol
      - corticosteroids
        - aldosterone
        - hydroxycorticosteroid
          - cortisone
      - estrogens
      - prostaglandins
    - tocopherol
  - nucleic acids
    - deoxyribonucleic acid
    - ribonucleic acids
  - nucleotides
    - adeninas
    - adenosinas
      - adenosine diphosphate
      - adenosine triphosphate
      - cyclic AMP
    - polynucleotides
    - pyridine nucleotides
    - uridylic acid
  - organic boron compounds
  - organic charge transfer salts
  - organic germanium compounds
  - organic liquids

organic lithium compounds
organic peroxides
organic phosphorus compounds
phosphazene
phosphene
phosphonitriles
uridylic acid
organic silicon compounds
triphenyl silicon
organic sulfur compounds
organic tin compounds
pentanone
peptides
polypeptides
glutathione
hypertensin
polynuclear organic compounds
propargyl groups
proteins
albumins
aspartates
calmodulin
elastin
enzymes
aldolase
amidase
carbonic anhydrase
catalase
cholinesterase
cytochromes
hexokinase
lysozyme
nuclease
oxidase
papain
pepsin
protease
thrombin
trypsin
fibrin
globulins
fibrinogen
gamma globulin
hemoglobin
carboxyhemoglobin
oxyhemoglobin
keratins
lipoproteins
melanin
myoglobin
proteinoids
prothrombin
protoproteins
quinoline
quinones
serotonin
RT alcohols
aldehydes
∞ aliphatic compounds
alkyl compounds
∞ aromatic compounds
∞ chemical compounds
chemical evolution
esters
ethers
hydroxyl compounds
metabolites
methoxy systems
methyl compounds
nitroso compounds
organic superconductors
organic wastes (fuel conversion)
organometallic compounds
∞ salts

organic coolants
GS coolants
organic coolants

organic cooled reactors
UF *orgel reactor*
GS nuclear reactors
liquid cooled reactors
organic cooled reactors
experimental organic cooled reactors
RT reactor design
reactor technology

organic fluorine compounds
USE **fluorine organic compounds**

organic germanium compounds
GS germanium compounds
organic germanium compounds
organic compounds
organic germanium compounds
organometallic compounds
organic germanium compounds
RT ∞ chemical compounds
∞ metal compounds

organic lasers
GS stimulated emission devices
lasers
organic lasers
dye lasers
RT carbon dioxide lasers
carbon lasers
chemical lasers
gas lasers
infrared lasers
liquid lasers

organic liquids
GS liquids
organic liquids
organic compounds
organic liquids
RT pyruvates
xanthic acids

organic lithium compounds
GS lithium compounds
organic lithium compounds
organic compounds
organic lithium compounds
organometallic compounds
organic lithium compounds
RT ∞ chemical compounds
∞ metal compounds

organic materials
GS **organic materials**
peat
RT biodegradability
carbonaceous materials
cork (materials)
cotton fibers
elastomers
linen
∞ materials
molds
paper (material)
phase change materials
plastics
∞ polymers
rosin
rubber
silk
thermochromatic materials
wood
wool

organic moderated reactors
GS nuclear reactors
organic moderated reactors
experimental organic cooled reactors

organic nitrates
GS esters
organic nitrates
cellulose nitrate
nitroforms
hydrazine nitroform
nitroglycerin
PETN
nitrogen compounds
nitrates
organic nitrates
cellulose nitrate
nitroforms
hydrazine nitroform
nitroglycerin
PETN

organic peroxides
DEF Organic compounds containing radical groups combined with oxides in which two atoms of oxygen are linked together, e.g., diethyl peroxide.
GS chalcogenides
oxides
anhydrides
peroxides
organic peroxides
organic compounds
organic peroxides
RT air pollution
hydrocarbons
inorganic peroxides

organic phosphorus compounds
GS organic compounds
organic phosphorus compounds
phosphazene
phosphene
phosphonitriles
uridylic acid
phosphorus compounds
organic phosphorus compounds
phosphazene
phosphene
phosphonitriles
uridylic acid
RT ∞ chemical compounds

organic semiconductors
GS semiconductors (materials)
organic semiconductors
RT ∞ chemical compounds
conducting polymers
conductors
organic superconductors
semiconductor devices

organic silicon compounds
GS organic compounds
organic silicon compounds
triphenyl silicon
silicon compounds
organic silicon compounds
triphenyl silicon
RT ∞ chemical compounds

organic solids
DEF Solid materials composed of organic materials.
GS solids
organic solids
RT astronomical spectroscopy

cosmic dust
dissolved organic matter
planetary atmospheres

organic sulfur compounds
GS organic compounds
. **organic sulfur compounds**
sulfur compounds
. **organic sulfur compounds**
RT ∞ chemical compounds

organic superconductors
(added May 1991)
GS conductors
. superconductors (materials)
. . **organic superconductors**
RT organic charge transfer salts
organic compounds
organic semiconductors

organic tin compounds
GS organic compounds
. **organic tin compounds**
organometallic compounds
. **organic tin compounds**
tin compounds
. **organic tin compounds**
RT ∞ chemical compounds
∞ metal compounds

organic wastes (fuel conversion)
RT ∞ conversion
energy conversion
garbage
human wastes
metabolic wastes
organic compounds
residues
sewage
sludge
wastes

organisms
RT animals
biomass
carbon cycle
deep scattering layers
plants (botany)

organizations
UF *associations*
GS **organizations**
. European Space Agency
. federations
. . bureaus (organizations)
. ISRO
. North Atlantic Treaty Organization (NATO)
. World Meteorological Organization
RT teams
United Nations

organizing
RT personnel
unionization

organometallic compounds
UF *metalloorganic compounds*
GS **organometallic compounds**
. chlorophylls
. ferrocenes
. . alkylferrocene
. hemoglobin
. . carboxyhemoglobin
. . oxyhemoglobin
. organic aluminum compounds
. organic germanium compounds
. organic lithium compounds
. organic tin compounds
. porphines
RT alkoxides
chelates
∞ chemical compounds
∞ metal compounds
metalloids
metalorganic chemical vapor deposition
organic compounds
synthetic metals
tetrabutyls

organometallic polymers
UF *metallosiloxane polymers*
metalloxane polymers
RT polycarbosilanes
∞ polymers
polysilanes

organometallic vapor deposition
USE **metalorganic chemical vapor deposition**

organs
SN (FOR SPECIFIC ORGANS, ORGAN SUBSTRUCTURES AND ORGAN SYSTEMS SEE ANATOMY)
GS **organs**
. viscera
RT anatomy
cells (biology)
circulatory system
digestive system
gastrointestinal system
genitourinary system
glands (anatomy)
respiratory system
sense organs
tissues (biology)

orgel reactor
USE **organic cooled reactors**

Orgueil meteorite
GS celestial bodies
. meteorites
. . stony meteorites
. . . carbonaceous meteorites
. . . . carbonaceous chondrites
. . . . . **Orgueil meteorite**
. . . chondrites
. . . . carbonaceous chondrites
. . . . . **Orgueil meteorite**

ORIC cyclotron
USE **Oak Ridge isochronous cyclotron**

∞ **orientation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT alignment
attitude (inclination)
azimuth
bearing (direction)
Bragg angle
collimation
crystallography
directivity
education
fiber orientation
field strength
horizontal orientation
instrument orientation
isotropy
optical properties
orbital position estimation
ply orientation
polarization (spin alignment)
polarization (waves)
position (location)
positioning
sound localization
vertical orientation
vertical perception
visual perception

orifice flow
GS fluid flow
. **orifice flow**
RT choked flow
critical flow
∞ flow
gas flow
grazing flow
laminar flow
liquid flow
multiphase flow
orifices
pipe flow
pressure gradients
single-phase flow
steady flow
steam flow
subcritical flow
supercritical flow
turbulent flow
unsteady flow

orifices
RT annular ducts
apertures
cavities
chokes (fuel systems)
chokes (restrictions)
ducts
flow measurement
flowmeters
gaps
injectors
∞ nozzles
openings
∞ operations
orifice flow
ports (openings)
spray nozzles
throats
Venturi tubes

Origin of Plasmas in Earth Neighborhood
USE **OPEN Project**

∞ **origins**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT causes
coordinates
derivation
graphs (charts)
petrogenesis

Orion (radio interferometry network)
DEF An operational radio interferometry observational network.
GS networks
. **Orion (radio interferometry network)**
RT radio interferometers
radio receivers
tracking networks

Orion aircraft
USE **P-3 aircraft**

Orion constellation
GS constellations
. **Orion constellation**
RT Opik theory

Orion nebula
Sigma Orionis

Orion nebula
DEF An H II region about 500 pc distant and barely visible to the naked eye in the center of Orion's sword.
GS celestial bodies
. nebulae
. . **Orion nebula**
hydrogen clouds
. **Orion nebula**
RT astrophysics
Cassiopeia A
Crab nebula
galaxies
Gum nebula
interstellar gas
interstellar matter
irregular galaxies
Magellanic clouds
Milky Way Galaxy
Opik theory
Orion constellation
planetary nebulae
stellar coronas
supernovae

Orionid meteoroids
GS celestial bodies
. meteoroid showers
. . **Orionid meteoroids**
. meteoroids
. . **Orionid meteoroids**
RT Aquarid meteoroids

Orlicz space
RT set theory

ornithopter aircraft
USE **research aircraft**

Ornstein-Uhlenbeck process
RT ∞ processes

orographic clouds
USE **cap clouds**

orography
GS geography
. **orography**
geology
. **orography**
RT cones (volcanoes)
geomorphology
isostasy
Mars volcanoes
mountains
peaks (landforms)
volcanoes
volcanology

Orr-Sommerfeld equations
RT ∞ equations
flow distortion
flow stability
flow theory
quantum mechanics
velocity distribution

orreries
USE **astronomical models**

orthicons
GS electron tubes
. camera tubes
. . **orthicons**
. . . image orthicons
RT image intensifiers
photocathodes
television cameras
television equipment

ortho hydrogen
GS gases
. **ortho hydrogen**
RT hydrogen

ortho para conversion
GS isomerization
. **ortho para conversion**
RT ∞ conversion
para hydrogen

orthogonal functions
GS analysis (mathematics)
. complex variables
. . **orthogonal functions**
. . . Walsh function
functions (mathematics)
. **orthogonal functions**
. . **Walsh function**
RT Bessel functions
exponential functions
function space
Hankel functions
hyperbolic functions
Laguerre functions
Legendre functions
linear transformations
Mathieu function
orthogonality
orthonormal functions
quality control

orthogonal multiplexing theory
RT pulse communication
signal transmission
∞ theories
wave interaction
wavelength division multiplexing

orthogonality
UF *Kronecker product*
GS moments
. distribution moments
. . **orthogonality**
statistical analysis
. variance (statistics)
. . multivariate statistical analysis
. . . **orthogonality**
RT covariance
experiment design
factor analysis
orthogonal functions
quality control

orthography
RT handwriting
intelligibility
languages
linguistics
semantics
syntax
words (language)

orthonormal functions
GS functions (mathematics)
. **orthonormal functions**
RT orthogonal functions
wavelet analysis

orthopedics
GS medical science
. **orthopedics**

orthophotography
GS imagery
. photography
. . **orthophotography**
RT aerial photography
color photography
mapping

orthostatic tolerance
RT bed rest
blood pressure
head down tilt
human tolerances
lower body negative pressure
posture
tolerances (physiology)

orthotropic cylinders
RT ∞ cylinders
cylindrical bodies
cylindrical shells
rocket engine cases

orthotropic plates
GS structural members
. plates (structural members)
. . **orthotropic plates**

orthotropic shells
GS shells (structural forms)
. **orthotropic shells**
RT cylindrical shells
metal shells
reinforced shells
shell stability
thin walled shells

orthotropism
RT plates (structural members)

oscillating cylinders
RT ∞ cylinders
cylindrical bodies
cylindrical shells
oscillations
vibration

oscillating flow
GS fluid flow
. unsteady flow
. . **oscillating flow**
RT buffeting
compressibility effects
flow distortion
nonequilibrium flow
small perturbation flow
Strouhal number
surface tension driven convection

oscillation dampers
RT ∞ absorbers
∞ dampers
Maxwell bodies
nonoscillatory action
nonstabilized oscillation
nutation dampers
springs (elastic)
vibration isolators

oscillations
DEF Fluctuations or vibrations on each side of a mean value or position. One oscillation is half an oscillatory cycle, consisting of a fluctuation or vibration in one direction; half a vibration. The variation, usually with time, of the magnitude of a quantity with respect to a specified reference when the magnitude is alternately greater and smaller than the reference. Used for phugoid oscillations.
UF *phugoid oscillations*
GS **oscillations**
. airfoil oscillations

. . wing oscillations
. . . wing rock
. electron oscillations
. harmonic oscillation
. hydrofoil oscillations
. molecular oscillations
. nonoscillatory action
. nonstabilized oscillation
. plasma oscillations
. pressure oscillations
. self oscillation
. Southern oscillation
. stable oscillations
. stellar oscillations
. . solar oscillations
. transient oscillations
. transverse oscillation
. . H waves
. underdamped oscillations
RT amplitudes
Brunt–Vaisala frequency
crystal oscillators
damping
feedback
∞ motion
nonuniformity
orbital resonances (celestial mechanics)
oscillating cylinders
oscillators
pendulums
periodic variations
perturbation
resonance
resonant vibration
∞ rhythm
spacecraft motion
springs (elastic)
symmetry
traveling wave tubes
vibration
vibration tests

oscillator strengths
DEF A quantum mechanical analog of the number of dispersion electrons having a given natural frequency in an atom, used in an equation for the absorption coefficient of a spectral line.
RT absorption spectra
absorptivity
electron oscillations
electron transitions
line spectra
molecular oscillations
molecular oscillators
oscillators
spectral line width

oscillators
DEF Nonrotating devices for producing alternating current.
UF *wave oscillators*
GS **oscillators**
. autodynes
. crystal oscillators
. . piezoelectric crystals
. harmonic oscillators
. mechanical oscillators
. . pendulums
. . . gyroscopic pendulums
. microwave oscillators
. . magnetrons
. . . rigotrons
. molecular oscillators
. relaxation oscillators
. . phantastrons
. synchronized oscillators
. vacuum tube oscillators
. voltage controlled oscillators
RT amplifiers
automatic frequency control
cavity resonators
circuits
electron tubes
feedback
feedback amplifiers
flip–flops
frequency pulling
frequency stability
frequency synthesizers
harmonic generators
inverters
microwave tubes
∞ motion
multivibrators
negative feedback
nonoscillatory action
nonstabilized oscillation
oscillations
oscillator strengths
parametrons
periodic variations
perturbation
positive feedback
resonant frequencies
resonators
self excitation
semiconductor devices
signal generators
solid state devices
subharmonic generators
superconducting cavity resonators
transformers
vibration

oscillograms
USE **oscillographs**

oscillographs
UF *oscillograms*
GS measuring instruments
. **oscillographs**
recording instruments
. **oscillographs**
RT Barkhausen effect
electrical measurement
oscilloscopes
time measurement

oscilloscopes
DEF Instruments for producing visual representations of oscillations or changes in an electric current.
RT cathode ray tubes
electronic equipment tests
flying spot scanners
frequency analyzers
oscillographs
sweep circuits
sweep frequency
synchroscopes
video equipment

osculations
USE **double cusps**

Oseen approximation
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Oseen approximation**
RT incompressible fluids
Navier–Stokes equation
Rosliko prediction
Stokes flow
viscous fluids

osmium
GS chemical elements
. **osmium**
. . osmium isotopes
metals
. refractory metals
. . **osmium**
. . . osmium isotopes
. transition metals
. . **osmium**
. . . osmium isotopes
refractory materials
. refractory metals
. . **osmium**
. . . osmium isotopes

osmium alloys
GS alloys
. heat resistant alloys
. . refractory metal alloys
. . . **osmium alloys**
refractory materials
. refractory metal alloys
. . **osmium alloys**

osmium compounds
RT ∞ chemical compounds
Group *8* compounds
∞ metal compounds

osmium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **osmium isotopes**
. osmium
. . **osmium isotopes**
metals
. refractory metals
. . osmium
. . . **osmium isotopes**
. transition metals
. . osmium
. . . **osmium isotopes**
refractory materials
. refractory metals
. . osmium
. . . **osmium isotopes**

osmometers
GS measuring instruments
. pressure gages
. . **osmometers**

osmosis
UF *hypertonia*
osmotic pressure
GS **osmosis**
. reverse osmosis
RT cell membranes (biology)
demineralizing
desalinization
diaphragms (mechanics)
diffusion
extraction
homeostasis
isotonicity
membranes
permeating
pressure
∞ separation
water balance

osmotic pressure
USE **osmosis**

OSO
UF *Orbiting Solar Observatory*
GS **artificial satellites**
geophysical satellites
OSO
AOSO
OSO-1
OSO-2
OSO-3
OSO-4
OSO-5
OSO-6
OSO-7
OSO-8
OSO-C
scientific satellites
astronomical satellites
OSO
AOSO
OSO-1
OSO-2
OSO-3
OSO-4
OSO-5
OSO-6
OSO-7
OSO-8
OSO-C
observatories
astronomical observatories
astronomical satellites
OSO
AOSO
OSO-1
OSO-2
OSO-3
OSO-4
OSO-5
OSO-6
OSO-7
OSO-8
OSO-C
solar observatories
OSO
AOSO
OSO-1
OSO-2
OSO-3
OSO-4
OSO-5
OSO-6
OSO-7
OSO-8
OSO-C
geophysical observatories
OSO
AOSO
OSO-1
OSO-2
OSO-3
OSO-4
OSO-5
OSO-6
OSO-7
OSO-8
OSO-C
RT **sun**
Thor Delta launch vehicle

OSO-1
UF *OSO-A*
S-16 satellite
GS **artificial satellites**
geophysical satellites
OSO
OSO-1
scientific satellites
astronomical satellites
OSO
OSO-1
observatories
astronomical observatories
astronomical satellites
OSO
OSO-1
solar observatories
OSO
OSO-1
geophysical observatories
OSO
OSO-1
RT Delta launch vehicle

OSO-2
UF *OSO-B*
S-17 satellite
GS **artificial satellites**
geophysical satellites
OSO
OSO-2
scientific satellites
astronomical satellites
OSO
OSO-2
observatories
astronomical observatories
astronomical satellites
OSO
OSO-2
solar observatories
OSO
OSO-2
geophysical observatories
OSO
OSO-2
RT Delta launch vehicle

OSO-3
UF *OSO-E*
GS **artificial satellites**
geophysical satellites
OSO
OSO-3
scientific satellites
astronomical satellites
OSO
OSO-3
observatories
astronomical observatories
astronomical satellites
OSO
OSO-3
solar observatories
OSO
OSO-3
geophysical observatories
OSO
OSO-3

OSO-4
UF *OSO-D*
GS **artificial satellites**
geophysical satellites
OSO
OSO-4
scientific satellites
astronomical satellites
OSO
OSO-4
observatories
astronomical observatories
astronomical satellites
OSO
OSO-4
solar observatories
OSO
OSO-4
geophysical observatories
OSO
OSO-4
RT Delta launch vehicle

OSO-5
UF *OSO-F*
GS **artificial satellites**
geophysical satellites
OSO
OSO-5
scientific satellites
astronomical satellites
OSO
OSO-5
observatories
astronomical observatories
astronomical satellites
OSO
OSO-5
solar observatories
OSO
OSO-5
geophysical observatories
OSO
OSO-5

OSO-6
UF *OSO-G*
GS **artificial satellites**
geophysical satellites
OSO
OSO-6
scientific satellites
astronomical satellites
OSO
OSO-6
observatories
astronomical observatories
astronomical satellites
OSO
OSO-6
solar observatories
OSO
OSO-6
geophysical observatories
OSO
OSO-6

OSO-7
UF *OSO-H*
GS **artificial satellites**
geophysical satellites
OSO
OSO-7
scientific satellites
astronomical satellites
OSO
OSO-7
observatories
astronomical observatories
astronomical satellites
OSO
OSO-7
solar observatories
OSO
OSO-7
geophysical observatories
OSO

. . . **OSO-7**
RT dual spin spacecraft

OSO-8
DEF One of a series of NASA orbiting solar observatories developed mainly for solar research. Used for OSO-J
UF *OSO-J*
GS artificial satellites
. geophysical satellites
. . OSO
. . . **OSO-8**
. scientific satellites
. . astronomical satellites
. . . OSO
. . . . **OSO-8**
. . observatories
. . . astronomical observatories
. . . . astronomical satellites
. . . . . OSO
. . . . . **OSO-8**
. . . solar observatories
. . . . OSO
. . . . . **OSO-8**
. . geophysical observatories
. . . OSO
. . . . **OSO-8**

OSO-A
USE **OSO-1**

OSO-B
USE **OSO-2**

OSO-C
UF *S-57 satellite*
GS artificial satellites
. geophysical satellites
. . OSO
. . . **OSO-C**
. scientific satellites
. . astronomical satellites
. . . OSO
. . . . **OSO-C**
. . observatories
. . . astronomical observatories
. . . . astronomical satellites
. . . . . OSO
. . . . . **OSO-C**
. . . solar observatories
. . . . OSO
. . . . . **OSO-C**
. . geophysical observatories
. . . OSO
. . . . **OSO-C**
RT Delta launch vehicle

OSO-D
USE **OSO-4**

OSO-E
USE **OSO-3**

OSO-F
USE **OSO-5**

OSO-G
USE **OSO-6**

OSO-H
USE **OSO-7**

OSO-J
USE **OSO-8**

Osprey aircraft
USE **V-22 aircraft**

Osprey missile
GS missiles
. **Osprey missile**
RT J-85 engine

OSS-1 payload
DEF Experiment package flown aboard the Space Shuttle STS-3 in 1982 which was sponsored by the NASA Office of Space Sciences from which the acronym is derived.
GS payloads
. Space Shuttle payloads
. . **OSS-1 payload**
RT exploration
Get Away Specials (STS)
investigation
NASA programs
space transportation system
spaceborne experiments

OSTA-1 payload
SN (OFFICE OF SPACE & TERRESTRIAL APPLICATIONS PAYLOADS)
DEF Spaceborne experiments flown aboard the Space Shuttle STS-2 in 1981 which was sponsored by the NASA Office of Space & Terrestrial Applications from which the acronym is derived. Used for Office of Space & Terrestr Applic Payloads
UF *Office of Space & Terrestr Applic Payloads*
GS payloads
. Space Shuttle payloads
. . **OSTA-1 payload**
RT space transportation system
spaceborne experiments

OSTA-2 payload
SN (OFFICE OF SPACE & TERRESTRIAL APPLICATIONS PAYLOADS)
UF *Office of Space & Terrestr Applic Payloads*
GS payloads
. **OSTA-2 payload**
RT space transportation system
Spacelab

OSTA-3 payload
SN (OFFICE OF SPACE & TERRESTRIAL APPLICATIONS PAYLOADS)
DEF Spaceborne systems flown aboard the Space Shuttle STS-17, sponsored by the NASA Office of Space & Terrestrial Applications from which the acronym is derived. The systems included the feature identification and location experiment-1 (FILE-1), the measurement of atmospheric pollution from satellite (MAPS), the imaging camera-B, and the large format camera/attitude reference system (LFC/ARS). Used for Office of Space & Terrestr Applic Payloads
UF *Office of Space & Terrestr Applic Payloads*
GS payloads
. Space Shuttle payloads
. . **OSTA-3 payload**
RT remote sensing
space transportation system
spaceborne experiments
spacecraft equipment

osteoporosis
DEF A medical condition whose chief symptom is the loss of internal bone mass.
GS diseases
. **osteoporosis**
RT bone demineralization
bone mineral content
bones
calcium metabolism
metabolism

Ostwald coarsening
USE **Ostwald ripening**

Ostwald ripening
(added March 1994)
UF *Ostwald coarsening*
RT coarseness
crystallization
grain size
microstructure
phase transformations
precipitation (chemistry)
solid solutions
solidification

OT-2
USE **ESSA 2 satellite**

OT-3
USE **ESSA 1 satellite**

OTF
USE **optical transfer function**

otolaryngology
GS medical science
. **otolaryngology**
RT ear

otolith organs
DEF Structures of the inner ear (utricle and saccule) which respond to linear acceleration and tilting.
GS anatomy
. sense organs
. . ear
. . . labyrinth
. . . . **otolith organs**
. . gravireceptors
. . . **otolith organs**
. receptors (physiology)
. . gravireceptors
. . . **otolith organs**
RT oculogravic illusions
Orbiting Frog Otolith
semicircular canals
vertical perception

otology
GS medical science
. **otology**
RT ear

OTS (ESA)
UF *Orbital Test Satellite (ESA)*
GS artificial satellites
. ESA satellites
. . **OTS (ESA)**
ESA spacecraft
. ESA satellites
. . **OTS (ESA)**
RT European Communications Satellite
European space programs

Otto cycle
GS cycles
. thermodynamic cycles
. . **Otto cycle**
RT Rankine cycle

OTV
USE **orbit transfer vehicles**

outcrops
RT folds (geology)
formations
geology

Outer Banks (NC)
GS landforms

. barriers (landforms)
. . **Outer Banks (NC)**
RT Atlantic Ocean
islands
North Carolina

outer planet missions
USE **Grand Tours**

outer planet spacecraft
USE **outer planets explorers**

outer planets explorers
UF *outer planet spacecraft*
planetary explorer
RT Delta launch vehicle
Explorer satellites
flyby missions
Grand Tours
interplanetary flight
Mars probes
∞ spacecraft
TOPS (spacecraft)
Venus probes

outer radiation belt
GS particles
. charged particles
. . magnetically trapped particles
. . . radiation belts
. . . . **outer radiation belt**
. corpuscular radiation
. . radiation belts
. . . **outer radiation belt**
. trapped particles
. . magnetically trapped particles
. . . radiation belts
. . . . **outer radiation belt**
RT artificial radiation belts
inner radiation belt
proton belts
∞ radiation

outer space treaty
GS policies
. foreign policy
. . international relations
. . . international cooperation
. . . . **outer space treaty**
RT conventions
international law
research and development
resource allocation
space law

outgassing
DEF The evolution of gas from a material in a vacuum.
RT degassing
desorption
evolution (liberation)
gas evolution
purging
residual gas
transpiration
vacuum
vacuum pumps

outlet flow
GS fluid flow
. **outlet flow**
RT cascade flow
channel flow
∞ flow
flow characteristics
nozzle flow

outlets
GS **outlets**
. vents
RT apertures
cavities
∞ discharge
doors
ducts
egress
exhaust nozzles
exhaust systems
gates (openings)
∞ nozzles
openings
output
pipe nozzles
plugs
ports (openings)
∞ terminals

outlets (geology)
USE **estuaries**

outliers (landforms)
DEF Areas or groups of rocks surrounded by rocks of older age. Used for klippen.
UF *klippen*
GS landforms
. **outliers (landforms)**
RT formations
rocks
soil erosion

outliers (statistics)
DEF In sets of data values so far removed from other values in the distribution that their presence cannot be attributed to the random combination of change causes.
RT mathematical models
probability theory
statistical analysis
statistical distributions
statistical tests

output
DEF The yield or product of an activity furnished by man, machine, or system. Used for dummy loads.
UF *dummy loads*
GS **output**
. cardiac output
. . heart minute volume
. . stroke volume
. laser outputs
. maser outputs
RT ∞ capacity
catchers
computer systems performance
delivery
efflux
input
outlets
∞ performance
power conditioning
printouts
∞ production
products
readout
supplying
tracking problem
transfer functions
transmission
yield

OV-1 aircraft
UF *AO-1 aircraft*
Grumman OV-1C aircraft
Mohawk aircraft
GS Grumman aircraft
. **OV-1 aircraft**
jet aircraft
. turboprop aircraft
. . **OV-1 aircraft**
monoplanes
. **OV-1 aircraft**
observation aircraft
. **OV-1 aircraft**
RT ∞ aircraft

OV-1 satellites
GS artificial satellites
. scientific satellites
. . **OV-1 satellites**
RT gravity gradient satellites
spin stabilization

OV-10 aircraft
UF *NA-300 aircraft*
GS attack aircraft
. COIN aircraft
. . **OV-10 aircraft**
jet aircraft
. turboprop aircraft
. . **OV-10 aircraft**
monoplanes
. **OV-10 aircraft**
North American aircraft
. **OV-10 aircraft**
observation aircraft
. **OV-10 aircraft**
RT ∞ aircraft

OV-2 satellites
GS artificial satellites
. scientific satellites
. . **OV-2 satellites**
RT gravity gradient satellites
spin stabilization

OV-3 satellites
GS artificial satellites
. scientific satellites
. . **OV-3 satellites**
RT gravity gradient satellites
spin stabilization

OV-4 satellites
GS artificial satellites
. scientific satellites
. . **OV-4 satellites**
RT gravity gradient satellites
spin stabilization

OV-5 satellites
GS artificial satellites
. scientific satellites
. . **OV-5 satellites**
RT gravity gradient satellites
spin stabilization

ovaries
GS anatomy
. genitourinary system
. . reproductive systems
. . . sex glands
. . . . gonads
. . . . . **ovaries**
. glands (anatomy)
. . endocrine glands
. . . gonads
. . . . **ovaries**
. . sex glands
. . . gonads
. . . . **ovaries**
RT eggs
menstruation

ovens
GS heating equipment

ovens
RT baking
dry heat
furnaces
waste energy utilization

over-the-horizon radar
GS radar
search radar
over-the-horizon radar
RT early warning systems
moving target indicators
optical radar
radar detection
radar range

overcast
USE **cloud cover**

overcompression
USE **overconsolidation**

overconsolidation
UF *overcompression*
RT consolidation
foundations

Overhauser effect
DEF In atomic physics, a radio frequency field applied to a substance in an external magnetic field, whose nuclei have spin 1/2 and which has unpaired electrons at the electron spin resonance frequency. This results in polarization of the nuclei as great as if the nuclei had the much larger electron magnetic moment.
RT ∞ effects
magnetic resonance
nuclear spin
∞ polarization
resonance

overpressure
DEF (1) The pressure resulting from the blast wave of an explosion. It is referred to as positive when it exceeds atmospheric pressure and negative during the passage of the wave when resulting pressures are less than atmospheric pressure. (2) The transient pressure, usually expressed in pounds per square inch, exceeding existing atmospheric pressure manifested in the blast wave from an explosion. During some period of the passage of the wave past a point, the overpressure is negative.
GS pressure
overpressure
RT blast loads
dynamic pressure

overtones
USE **harmonics**

overvoltage
RT circuit protection
decomposition
electric potential
Geiger counters
open circuit voltage
polarization (charge separation)
surges

oxalates
GS **oxalates**
cobalt oxalates
RT oxalic acid
∞ oxygen compounds

oxalic acid
GS acids
carboxylic acids
oxalic acid
organic compounds
carboxylic acids
oxalic acid
RT oxalates

oxamic acids
GS acids
carboxylic acids
oxamic acids
nitrogen compounds
amides
oxamic acids
organic compounds
carboxylic acids
oxamic acids

oxazole
DEF Compounds that contain a five-membered heterocyclic ring containing one nitrogen and one oxygen atom.
GS organic compounds
cyclic compounds
heterocyclic compounds
azoles
oxazole

oxetane polymers
(added August 1994)
RT alkenes
binders (materials)
carbonyl compounds
monomers
photochemical reactions
∞ polymers
propellants

oxidase
GS acids
oxidase
biopolymers
proteins
enzymes
oxidase
organic compounds
proteins
enzymes
oxidase

oxidation
DEF A reaction in which electrons are removed from a reactant. Sometimes, more specifically the combination of a reactant with oxygen.
GS chemical reactions
oxidation
electrochemical oxidation
photooxidation
rusting
RT association reactions
charring
chemical attack
combustion
combustion chemistry
corrosion
degradation
dehydrogenation
dopa
electron transfer
epoxidation
erosive burning
fuel combustion
hot corrosion
hydrocarbon combustion
metal combustion
oxidizers
oxygenation
passivity
reduction (chemistry)
roasting
thermal resistance
turbulent combustion

oxidation resistance
GS corrosion resistance
oxidation resistance
RT passivity
∞ resistance
rusting
siliconizing
thermal resistance

oxidation-reduction reactions
DEF An oxidizing chemical change, where an element's positive valence is increased (electron loss), accompanied by a simultaneous reduction of an associated element (electron gain).
GS chemical reactions
oxidation-reduction reactions
RT electrochemistry
reduction (chemistry)

oxide dispersion strengthening
(added February 1994)
GS dispersion strengthening
oxide dispersion strengthening
RT alloys
hardening (materials)
heat resistant alloys

oxide films
RT cathodic coatings
∞ films
metal oxides
metal surfaces
surface layers
thin films

oxides
GS chalcogenides
oxides
alkoxides
anhydrides
peroxides
inorganic peroxides
hydrogen peroxide
organic peroxides
potassium peroxides
sodium peroxides
boron oxides
brucite
carbon monoxide
carbon suboxides
chlorine oxides
dioxides
carbon dioxide
flint
hydrogen peroxide
silicon dioxide
quartz
coesite
stishovite
sulfur dioxides
germanium oxides
heavy water
indium oxides
metal oxides
alkaline earth oxides
barium oxides
beryllium oxides
alexandrite
calcium oxides
akermanite
magnesium oxides
akermanite
periclase

. . aluminum oxides
. . . alexandrite
. . . sapphire
. . bismuth oxides
. . cerium oxides
. . cesium oxides
. . chromium oxides
. . cobalt oxides
. . copper oxides
. . gallium oxides
. . hafnium oxides
. . iron oxides
. . . hematite
. . . ilmenite
. . . magnetite
. . lanthanum oxides
. . lead oxides
. . lithium oxides
. . manganese oxides
. . . Hopcalite (trademark)
. . mercury oxides
. . mixed oxides
. . . BSCCO superconductors
. . . YBCO superconductors
. . molybdenum oxides
. . nickel oxides
. . niobium oxides
. . platinum oxides
. . plutonium oxides
. . potassium oxides
. . scandium oxides
. . silver oxides
. . sodium peroxides
. . strontium oxides
. . tantalum oxides
. . thorium oxides
. . tin oxides
. . titanium oxides
. . . anatase
. . . ilmenite
. . . rutile
. . tungsten oxides
. . . scheelite
. . uranium oxides
. . vanadium oxides
. . yttrium oxides
. . zinc oxides
. . zirconium oxides
. . . yttria-stabilized zirconia
. nitrogen oxides
. nitric oxide
. nitrogen dioxide
. nitrogen tetroxide
. nitrous oxides
. phosphorus oxides
. pyroxenes
. . enstatite
. selenium oxides
. silicon oxides
. . muscovite
. . nepheline
. . silicon dioxide
. . . quartz
. . . . coesite
. . . . stishovite
. . spodumene
. sulfur oxides
. . sulfur dioxides
RT anodic coatings
cathodic coatings
ethylene oxide
euxenite
insulation
metal coatings
niobates
nonflammable materials
∞ oxygen compounds
solid oxide fuel cells
water

oxidizers
DEF Specifically, substances (not necessarily containing oxygen) that support the combustion of a fuel or propellant.
GS **oxidizers**
. high energy oxidizers
. liquid oxidizers
. liquid oxygen
. photochemical oxidants
. rocket oxidizers
. . FLOX
. . TAGN
RT ∞ agents
air pollution
fluorine
fuels
nitramine propellants
oxidation

oximetry
RT biochemical oxygen demand
blood
hyperoxia
hypoxia
oxygen consumption

oxosilanes
USE **polysilanes**

oxyacetylene
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkynes
. . . . **oxyacetylene**
RT acetylene
detonable gas mixtures
∞ oxygen compounds

oxyalkylation
USE **alkylation**

oxyfluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . **oxyfluorides**
. halides
. . fluorides
. . . **oxyfluorides**
RT ∞ oxygen compounds

oxygen
GS chemical elements
. **oxygen**
. . liquid oxygen
. . oxygen isotopes
. . . oxygen 17
. . . oxygen 18
. gases
. . **oxygen**
. . liquid oxygen
. . oxygen isotopes
. . . oxygen 17
. . . oxygen 18
RT Chlorella
high pressure oxygen
oxygen atoms
oxygen ions
oxygen plasma
ozone
reaction bonding
Schumann-Runge bands
sialon

oxygen 17
DEF An isotope of oxygen.
GS chemical elements
. nuclides
. . isotopes
. . . oxygen isotopes
. . . . **oxygen 17**
. oxygen
. . oxygen isotopes
. . . **oxygen 17**
. gases
. . oxygen
. . . oxygen isotopes
. . . . **oxygen 17**

oxygen 18
GS chemical elements
. nuclides
. . isotopes
. . . oxygen isotopes
. . . . **oxygen 18**
. oxygen
. . oxygen isotopes
. . . **oxygen 18**
. gases
. . oxygen
. . . oxygen isotopes
. . . . **oxygen 18**

oxygen afterglow
GS afterglows
. **oxygen afterglow**

oxygen analyzers
UF *oxygen detectors*
GS measuring instruments
. **oxygen analyzers**
RT gas analysis

oxygen atoms
GS atoms
. **oxygen atoms**
RT oxygen

oxygen breathing
RT ∞ breathing

∞ oxygen compounds
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT acids
aluminates
arsenates
borates
bromates
carbohydrates
carbon suboxides
carbonates
∞ chemical compounds
chlorates
chromates
germanium oxides
niobates
oxalates
oxides
oxyacetylene
oxyfluorides
oxygen fluorides
ozonates
ozone fluoride
ozonides
stannates

oxygen consumption
GS consumption

. **oxygen consumption**
RT biochemical oxygen demand
hyperoxia
hypoxia
metabolism
oximetry

oxygen deficiency
USE **hypoxia**

oxygen detectors
USE **oxygen analyzers**

oxygen fluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . **oxygen fluorides**
. halides
. . fluorides
. . . **oxygen fluorides**
RT∞ oxygen compounds

oxygen ions
GS ions
. **oxygen ions**
RT free radicals
negative ions
oxygen

oxygen isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **oxygen isotopes**
. . . . oxygen 17
. . . . oxygen 18
. oxygen
. . **oxygen isotopes**
. . . oxygen 17
. . . oxygen 18
gases
. oxygen
. . **oxygen isotopes**
. . . oxygen 17
. . . oxygen 18

oxygen masks
GS breathing apparatus
. **oxygen masks**
masks
. **oxygen masks**
oxygen supply equipment
. **oxygen masks**
RT high altitude breathing
life support systems
portable life support systems

oxygen metabolism
GS metabolism
. **oxygen metabolism**
RT hydrogen metabolism
respiration

oxygen plasma
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **oxygen plasma**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **oxygen plasma**
RT argon plasma
helium plasma
hydrogen plasma
oxygen

oxygen production
RT closed ecological systems
gas exchange

oxygen recombination
GS chemical reactions
. atomic recombination
. . **oxygen recombination**
recombination reactions
. atomic recombination
. . **oxygen recombination**
RT ionization

oxygen regulators
GS control equipment
. regulators
. . **oxygen regulators**
RT flow regulators
pressure regulators

oxygen spectra
GS spectra
. **oxygen spectra**
RT airglow
Herzberg bands
molecular spectra
solar spectra

oxygen supply equipment
UF *oxygen systems*
GS **oxygen supply equipment**
. oxygen masks
RT AEPS
air conditioning equipment
breathing apparatus
cabin atmospheres
compressed air
controlled atmospheres
emergency life sustaining systems
life support systems
pressurized cabins
survival equipment

oxygen systems
USE **oxygen supply equipment**

oxygen tension
GS pressure
. partial pressure
. . **oxygen tension**
. . . hypoxemia

oxygen toxicity
USE **hyperoxia**

oxygen–hydrocarbon rocket engines
(added May 1989)
UF *liquid oxygen hydrocarbon rocket engines*
LOX–hydrocarbon rocket engines
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **oxygen–hydrocarbon rocket engines**
RT booster rocket engines
liquid oxygen
reusable rocket engines
spacecraft propulsion

oxygenation
GS chemical reactions
. **oxygenation**
RT aeration
dissolved gases
oxidation

oxyhalides
GS halogen compounds
. halides
. . **oxyhalides**

oxyhemoglobin
GS biopolymers
. proteins
. . hemoglobin
. . . **oxyhemoglobin**
organic compounds
. proteins
. . hemoglobin
. . . **oxyhemoglobin**
organometallic compounds
. hemoglobin
. . **oxyhemoglobin**
RT erythrocytes

oxynitrides
DEF Base for a broad field of nitrogen ceramics utilizing silicon, aluminum, and other elements to produce high temperature refractory materials.
GS nitrogen compounds
. nitrides
. . **oxynitrides**
RT∞ chemical compounds
Group 5A compounds

ozonates
RT∞ oxygen compounds
ozone

ozone
DEF A very active form of oxygen that may be produced by the corona, arcing, or ultra-violet rays.
GS gases
. **ozone**
RT Halogen Occultation Experiment
oxygen
ozonates
ozone fluoride
ozonides
ozonometry
photochemical oxidants
SAGE satellite
Solar Mesosphere Explorer

ozone depletion
(added December 1991)
UF *ozone holes*
GS depletion
. **ozone depletion**
RT air pollution
Antarctic regions
Arctic regions
atmospheric composition
chlorofluorocarbons
chlorofluoromethane
ozonometry
ozonosphere
Total Ozone Mapping Spectrometer

ozone fluoride
GS halogen compounds
. fluorine compounds
. . fluorides
. . . **ozone fluoride**
. halides
. . fluorides
. . . **ozone fluoride**
RT∞ oxygen compounds
ozone

ozone holes
USE **ozone depletion**

ozone layer
USE **ozonosphere**

ozonides
RT∞ oxygen compounds
ozone

ozonometry
GS chemical tests
. chemical analysis
. . gas analysis
. . . **ozonometry**
RT ozone
ozone depletion
Total Ozone Mapping Spectrometer

ozonosphere
DEF The general stratum of the upper atmosphere in which there is an appreciable ozone concentration and in which ozone plays an important part in the radiation balance of the atmosphere. This region lies roughly between 10 and 50 kilometers, with maximum ozone concentration at about 20 to 25 kilometers. Used for ozone layer.
UF *ozone layer*
GS Earth atmosphere
. middle atmosphere
. . stratosphere
. . . **ozonosphere**
RT chemosphere
chlorofluorocarbons
homosphere
ozone depletion
Umkehr effect
upper atmosphere

P

P band
SN (225 TO 390 MHZ)
GS frequencies
. radio frequencies
. . microwave frequencies
. . . **P band**
. . ultrahigh frequencies
. . . **P band**
. . very high frequencies
. . . **P band**

P waves
GS elastic waves
. **P waves**
RT compressible fluids
compression waves
crustal fractures
diastational waves
S waves
seismic waves
surface waves

P–1 engine
GS engines
. rocket engines
. . booster rocket engines
. . . **P–1 engine**
. . solid propellant rocket engines
. . . **P–1 engine**

P–3 aircraft
UF *Orion aircraft*
P3V aircraft
GS antisubmarine warfare aircraft
. **P–3 aircraft**
jet aircraft
. turboprop aircraft
. . **P–3 aircraft**
Lockheed aircraft
. **P–3 aircraft**
monoplanes
. **P–3 aircraft**
RT ∞ aircraft
turboprop engines

P–51 aircraft
UF *Mustang aircraft*
GS attack aircraft
. fighter aircraft
. . **P–51 aircraft**
monoplanes
. **P–51 aircraft**
North American aircraft
. **P–51 aircraft**
single engine aircraft
. **P–51 aircraft**
RT ∞ aircraft

P–64 aircraft
USE **jet provost aircraft**

P–180 aircraft
UF *ME P–180 aircraft*
Messerschmitt ME P–180 aircraft
GS commercial aircraft
. **P–180 aircraft**
passenger aircraft
. **P–180 aircraft**
transport aircraft
. cargo aircraft
. . **P–180 aircraft**
RT ∞ aircraft

P–166 aircraft
UF *Piaggio P–166 aircraft*
GS monoplanes
. **P–166 aircraft**
passenger aircraft
. **P–166 aircraft**
Piaggio aircraft
. **P–166 aircraft**
transport aircraft
. cargo aircraft
. . **P–166 aircraft**
RT ∞ aircraft

P–308 aircraft
UF *ME P–308 aircraft*
Messerschmitt ME P–308 aircraft
GS attack aircraft
. **P–308 aircraft**
jet aircraft
. **P–308 aircraft**
monoplanes
. **P–308 aircraft**
RT ∞ aircraft

P–531 helicopter
UF *Scout helicopter*
Westland P–531 helicopter
GS V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **P–531 helicopter**
Westland aircraft
. **P–531 helicopter**
RT antisubmarine warfare aircraft
passenger aircraft

P–1127 aircraft
UF *Hawker P–1127 aircraft*
Kestrel aircraft
VZ–12 aircraft
XV–6A aircraft
GS attack aircraft
. fighter aircraft
. . **P–1127 aircraft**
Hawker Siddeley aircraft
. **P–1127 aircraft**
jet aircraft
. turbofan aircraft
. . **P–1127 aircraft**
monoplanes
. **P–1127 aircraft**
single engine aircraft
. **P–1127 aircraft**
V/STOL aircraft
. **P–1127 aircraft**
RT ∞ aircraft
Bristol–Siddeley BS 53 engine
Harrier aircraft
turbofan engines

P–1154 aircraft
UF *Hawker P–1154 aircraft*
GS attack aircraft
. fighter aircraft
. . **P–1154 aircraft**
Hawker Siddeley aircraft
. **P–1154 aircraft**
jet aircraft
. turbofan aircraft
. . **P–1154 aircraft**
monoplanes
. **P–1154 aircraft**
single engine aircraft
. **P–1154 aircraft**
supersonic aircraft
. **P–1154 aircraft**
V/STOL aircraft
. **P–1154 aircraft**
RT ∞ aircraft
turbofan engines

p–i–n diodes
USE **diodes**
p–i–n junctions

p–i–n junctions
UF *p–i–n diodes*
GS semiconductor junctions
. **p–i–n junctions**
RT diodes
∞ junctions
solar cells

p–n junctions
UF *n–p junctions*
GS semiconductor junctions
. **p–n junctions**
RT ∞ junctions
SIS (semiconductors)

p–n–p junctions
GS semiconductor junctions
. **p–n–p junctions**
RT ∞ junctions

p–n–p–n junctions
GS semiconductor junctions
. **p–n–p–n junctions**
RT ∞ junctions
latch–up
thyristors

p–type semiconductors
GS semiconductors (materials)
. **p–type semiconductors**
RT holes (electron deficiencies)
indium aluminum arsenides
semiconductor junctions

P.A.C.M. telemetry
SN (PULSE AMPLITUDE CODE MODULATION)
GS telecommunication
. telemetry
. . **P.A.C.M. telemetry**
transmission
. signal transmission
. . telemetry
. . . **P.A.C.M. telemetry**
RT amplitude modulation
communication equipment
differential pulse code modulation
modulation
pulse amplitude modulation
pulse code modulation

P3V aircraft
USE **P–3 aircraft**

P78–2 satellite
USE **SCATHA satellite**

PA–34 Seneca aircraft
UF *Seneca aircraft*
GS light aircraft
. Piper aircraft
. . **PA–34 Seneca aircraft**
RT ∞ aircraft
ATLIT project
GAW–1 airfoil

General Dynamics aircraft

PACE
USE **Physics and Chemistry Experiment in Space**

Pacific islands
GS landforms
islands
Pacific islands
Guam
Japan
Johnston Island
Kurile Islands
New Guinea (island)
New Zealand
Philippines
Samoa

Pacific Northwest (US)
GS regions
Pacific Northwest (US)
RT Canada
United States

Pacific Ocean
GS oceans
Pacific Ocean
RT Bering Sea
coastal ranges (CA)
el Nino
Gulf of Alaska
Gulf of California (Mexico)
Indonesia
mid-ocean ridges
Monterey Bay (CA)
San Francisco Bay (CA)
Sea of Okhotsk
Southern California

packages
DEF Any assemblies or apparatus, complete in themselves or practically so, identifiable as units and readily available for use or installation.
GS **packages**
instrument packages
Apollo Lunar Surface Experiments Package
EASEP
EREP
RT bags
boxes (containers)
bundles
cartridges
cases (containers)
∞ containers
∞ instruments
packaging

packaging
DEF (1) The technique of preparing goods for distribution; (2) The design criteria, processes, and procedures used to protect materials from deterioration and damage from the time manufacturing is completed until use or disposal; (3) The processes and procedures used to protect an item in a unit package.
GS **packaging**
electronic packaging
RT ∞ containers
corrosion prevention
encapsulating
enclosure
hauling
hoppers
inhibitors
marking
materials handling
packages
∞ packing
preserving
sealers
spiral wrapping
∞ storage
transportation
vermiculite
weatherproofing
∞ wrap

packet switching
DEF Switching circuit system for multiple access time division data transmission.
GS switching
packet switching
RT asynchronous transfer mode
beam switching
communication networks
data transmission
interruption
microwave switching
multiple access
network control
packet transmission
packets (communication)
protocol (computers)
radio transmission
sequencing
signal transmission
switching circuits
switching theory
telecommunication
time division multiple access

packet transmission
DEF Transmission of bursts of digital data.
GS telecommunication
packet transmission
Aloha system
transmission
signal transmission
data transmission
packet transmission
Aloha system
RT asynchronous transfer mode
automatic repeat request
channel capacity
message processing
packet switching
packets (communication)
satellite communication
spacecraft communication
transmission efficiency

packets (communication)
DEF Digital data messages which are almost always preceded by headers (containing address information and other control characters) and followed by control characters which signify the end of a message.
UF *bursts (communication)*
RT Aloha system
communication networks
data transmission
packet switching
packet transmission
transmission efficiency
wave packets
wide area networks

∞ **packing**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT packaging
packing density
packings (seals)
sealing

packing density
GS density (number/volume)
packing density
RT Bravais crystals
crystal structure
crystals
∞ packing
void ratio

packings (seals)
GS seals (stoppers)
packings (seals)
RT bearings
glands (seals)
labyrinth seals
∞ packing
pumps
sealers
sealing
shafts (machine elements)
valves

∞ **pad**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cushions
foundations
launching pads

paddles
RT folding structures
mixers
solar generators
turbomachine blades

Pade approximation
GS analysis (mathematics)
calculus
series (mathematics)
Pade approximation
numerical analysis
approximation
Pade approximation
real variables
series (mathematics)
Pade approximation

PAGEOS satellite
GS artificial satellites
geodetic satellites
PAGEOS satellite
passive satellites
PAGEOS satellite
RT Explorer 29 satellite
Explorer 36 satellite
GEOS 1 satellite
GEOS 2 satellite
GEOS 3 satellite

PAH
USE **polycyclic aromatic hydrocarbons**

pain
GS perception
sensory perception
pain
RT analgesia

pain sensitivity
GS perception
sensory perception
pain sensitivity
sensitivity
pain sensitivity

paint removal
(added August 1995)
UF *paint stripping*
GS removal
. **paint removal**
RT abrasives
cleaning
solvents
∞ stripping
surface treatment

paint stripping
USE **paint removal**

paints
GS coatings
. **paints**
RT fillers
finishes
metal coatings
pigments
primers (coatings)
protective coatings
rubber coatings
sealers
sprayed coatings
turpentine
varnishes

pair production
GS particle production
. **pair production**
RT electromagnetic absorption
electron emission
electron photon cascades
electron–positron pairs
emission
high energy interactions
nuclear reactions
photoproduction
positron annihilation
positrons

Pakistan
GS nations
. **Pakistan**
RT **Asia**
Bangladesh
Himalayas
Pakistan space program

Pakistan space program
(added November 1988)
GS programs
. space programs
. . **Pakistan space program**
RT Pakistan

Palapa 2 satellite
UF *Palapa B satellite*
GS artificial satellites
. communication satellites
. . **Palapa satellites**
. . . **Palapa 2 satellite**
RT Indonesian space program
international cooperation

Palapa B satellite
USE **Palapa 2 satellite**

Palapa satellites
DEF Satellites launched by the US for the Indonesian government for their domestic communications network.
GS artificial satellites
. communication satellites
. . **Palapa satellites**
. . . **Palapa 2 satellite**
RT Indonesian space program
international cooperation

paleobiology
DEF The study of life and organisms that existed in the geologic past.
RT archaebacteria
∞ biology
Cretaceous–Tertiary boundary
fossils
geochemistry
geochronology
paleontology

paleoclimatology
DEF The study of climates in the geologic past, involving fossil, glacial, isotropic, or other data.
GS climatology
. **paleoclimatology**
RT climate
climate change
paleontology

paleomagnetism
GS magnetic fields
. **paleomagnetism**
magnetic properties
. **paleomagnetism**
RT archaeology
cones (volcanoes)
continental drift
geology
geomagnetism
geophysics
Mars volcanoes
remanence
rocks
volcanoes
volcanology

paleontology
RT archaebacteria
Cambrian Period
Cenozoic Era
Cretaceous Period
Cretaceous–Tertiary boundary
formations
fossils
geochemistry
geochronology
geological surveys
geology
histories
Mesozoic Era
paleobiology
paleoclimatology
Paleozoic Era
Precambrian period
protobiology
stratigraphy
Tertiary Period

Paleozoic Era
(added June 1989)
DEF An era of geologic time, from the end of the Precambrian Period to the beginning of the Mesozoic Era, or about 570 to about 225 million years ago.
GS **Paleozoic Era**
. Cambrian Period
RT geochronology
Mesozoic Era
paleontology
Precambrian period

palladium
GS chemical elements
. **palladium**
metals
. transition metals
. . **palladium**
RT palladium isotopes

palladium alloys
GS alloys
. **palladium alloys**

palladium compounds
RT∞ chemical compounds
metals
transition metals

palladium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **palladium isotopes**
RT palladium

Palmer sweat index
RT perspiration
stress (physiology)
stress (psychology)

Palmgren–Miner rule
UF *Miner rule*
GS rules
. **Palmgren–Miner rule**
RT fatigue life

palmitic acid
GS acids
. carboxylic acids
. . fatty acids
. . . **palmitic acid**
organic compounds
. carboxylic acids
. . fatty acids
. . . **palmitic acid**
RT fats

Palo Verde Valley (CA)
GS valleys
. **Palo Verde Valley (CA)**
RT California
deserts

PAM (modulation)
USE **pulse amplitude modulation**

pampas
DEF A vast treeless grassy plain of temperate regions, especially as used in Argentina and adjacent parts of Uruguay. It is comparable to the prairies of North America, the steppes of the Eurasia, and the veld of South Africa.
GS land
. plains
. . **pampas**
landforms
. plains
. . **pampas**

PAN (polyacrylonitrile)
USE **polyacrylonitrile**

Panama
GS nations
. **Panama**
RT canals
Central America

Panama Canal Zone
GS regions

. **Panama Canal Zone**
RT Caribbean Sea
Central America
United States

pancreas
GS anatomy
. digestive system
. . **pancreas**
. glands (anatomy)
. . endocrine glands
. . . **pancreas**
RT diabetes mellitus
gastrointestinal system
trypsin

Pandora
(added July 1995)
DEF A natural satellite of Saturn, orbiting at a mean distance of 141,700 kilometers.
GS celestial bodies
. natural satellites
. . Saturn satellites
. . . **Pandora**
RT Saturn (planet)

panel flutter
GS vibration
. structural vibration
. . flutter
. . . **panel flutter**
. . self induced vibration
. . . **panel flutter**
RT aerodynamic noise
aeroelasticity
bending vibration

panel method (fluid dynamics)
DEF Technique for analyzing and predicting the properties and characteristics of fluid flow, sometimes called the finite element method.
GS procedures
. **panel method (fluid dynamics)**
RT Bernoulli theorem
boundary layers
computational fluid dynamics
finite element method
∞ flow
flow theory
fluid dynamics
flux vector splitting
gas-solid interactions
∞ methodology
turbulence
vortex lattice method

panels
SN (EXCLUDES GROUPS OF PEOPLE)
GS **panels**
. curved panels
. rectangular panels
. wing panels
RT baffles
ceilings (architecture)
∞ construction materials
dividers
flat plates
∞ plates
∞ sheets
shielding
thin plates
walls

panic
RT emotional factors
emotions
fear
human behavior

panoramic cameras
GS optical equipment
. cameras
. . **panoramic cameras**
photographic equipment
. cameras
. . **panoramic cameras**
RT camera shutters
focusing
lenses
photography
wide angle lenses

panoramic scanning
GS scanning
. **panoramic scanning**
RT conical scanning
frequency scanning
multispectral band scanners
radar scanning
scanners
searching
surveillance

panspermia
DEF The theory that holds that reproductive bodies of living organisms exist throughout the universe and develop wherever the environment is favorable.
RT abiogenesis
aerospace environments
bacteria
biological evolution
exobiology
extraterrestrial life
fungi

PANT program
DEF The passive nosetip technology (PANT) program is an investigation of flow phenomena over reentry vehicle nosetips by the Air Force. Used for ablative nosetips and passive nosetip technology.
UF *ablated nosetips*
passive nosetip technology
GS programs
. **PANT program**

Pantar chondrites
GS celestial bodies
. meteorites
. . stony meteorites
. . . chondrites
. . . . **Pantar chondrites**

Panther aircraft
USE **F-6 aircraft**

papain
GS biopolymers
. proteins
. . enzymes
. . . **papain**
organic compounds
. proteins
. . enzymes
. . . **papain**
RT papain

paper (material)
DEF Felted or matted sheets of cellulose fibers, formed on a fine wire screen from a dilute water suspension, and bonded together as the water is removed and the sheet is dried.
RT boards (paper)
Kraft process (woodpulp)
∞ materials
organic materials
webs (sheets)
wood

paper chromatography
GS chemical tests
. chemical analysis
. . chromatography
. . . **paper chromatography**
RT gas chromatography
liquid chromatography

papers
GS documents
. **papers**
RT boards (paper)
conferences
fibers
∞ films
laminates
literature
Presidential reports
privacy
reports
∞ sheets
webs (sheets)

papillae
RT protuberances

Papua New Guinea
GS nations
. **Papua New Guinea**
RT Asia
Australia
New Guinea (island)

para hydrogen
GS gases
. **para hydrogen**
RT hydrogen
ortho para conversion

parabolas
DEF Open curves where all points of which are equidistant from a fixed point called the focus, and a straight line. The limiting case occurs when the point is on the line, in which case the parabola becomes a straight line.
GS geometry
. Euclidean geometry
. . analytic geometry
. . . conics
. . . . **parabolas**

parabolic antennas
GS antennas
. directional antennas
. . reflector antennas
. . . **parabolic antennas**
RT antenna design
Cassegrain antennas
horn antennas
microwave antennas
radar antennas
radar equipment
radar reflectors

parabolic bodies
DEF Surfaces of revolution generated by revolving sections of parabolas about their major axis. Used for paraboloids.
UF *paraboloids*
GS symmetrical bodies
. bodies of revolution
. . **parabolic bodies**

parabolic differential equations
GS analysis (mathematics)
. real variables

. . differential equations
. . . partial differential equations
. . . . **parabolic differential equations**
RT ∞ equations

parabolic flight
RT **ascent trajectories**
ballistic trajectories
climbing flight
coasting flight
descent trajectories
∞ flight
midcourse trajectories
missile trajectories
suborbital flight
trajectories
weightlessness
weightlessness simulation

parabolic reflectors
DEF Reflecting surfaces having the cross section along the axis in the shape of a parabola. Parallel rays striking the reflector are brought to a focus at a point, or if the source of the rays is placed at the focus, the reflected rays are parallel. Used for dishes.
UF dishes
GS reflectors
. **parabolic reflectors**
. . paraboloid mirrors
RT microwave antennas
radar reflectors
reflector antennas
Schwarzschild antennas
solar reflectors

parabolic velocity
USE **escape velocity**

paraboloid mirrors
GS mirrors
. **paraboloid mirrors**
reflectors
. parabolic reflectors
. . **paraboloid mirrors**
RT reflecting telescopes
solar reflectors

paraboloids
USE **parabolic bodies**

parachute descent
UF *parachuting*
GS descent
. **parachute descent**
RT bailout
ejection
ejection training
escape (abandonment)
free fall
Mars Pathfinder
parachutes

parachute fabrics
GS fabrics
. **parachute fabrics**
RT Fortisan (trademark)
gores
netting (materials/structures)
parachutes

parachutes
DEF A device used, or intended to be used to retard the fall of a body or object through the air.
GS **parachutes**
. drag chutes
. parafoils
. recovery parachutes
. ribbon parachutes
. rotochutes
RT aerodynamic brakes
air drop operations
airdrops
ballutes
brakes (for arresting motion)
folding structures
parachute descent
parachute fabrics
paracone
parawings
towed bodies
whirl towers

parachuting
USE **parachute descent**

parachuting injury
GS injuries
. **parachuting injury**

paracone
DEF A system for recovering men and objects from great distances above the Earth's surface and landing them safely onto the Earth.
RT **escape capsules**
escape systems
parachutes

paradoxes
GS knowledge
. philosophy
. . **paradoxes**
RT ∞ logic
relativity

paraffins
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . **alkanes**
. . . . **paraffins**
. . . . . ceresin
RT hydrocarbon fuels
kerosene
shale oil

parafoils
(added July 1994)
GS parachutes
. **parafoils**
RT aerodynamic brakes
airdrops
bailout
free fall
paragliders

paragliders
GS gliders
. **paragliders**
. . inflatable gliders
RT folding structures
hypersonic gliders
parafoils
parawings
∞ subsonic aircraft

Paraguay
GS nations
. **Paraguay**
RT South America

parallax
DEF The difference in the apparent direction or position of an object when viewed from different points expressed as an angle.
GS **parallax**
. solar parallax
. stellar parallax
RT astrometry
companion stars
∞ optics

parallel computers
GS data processing equipment
. computers
. . digital computers
. . . **parallel computers**
. . . . massively parallel processors
. . . . . Connection Machine
. . . . MIMD (computers)
. . . . SIMD (computers)
RT hypercube multiprocessors

parallel flow
GS fluid flow
. **parallel flow**
. . pipe flow
. . three dimensional flow
. . . Karman–Bodewadt flow
. . . secondary flow
RT flow geometry
flow velocity
laminar flow
steady flow

parallel plates
RT capacitors
∞ channels
flat plates
metal plates
∞ plates
thin plates
waveguides

parallel processing (computers)
DEF The concurrent or simultaneous execution of more than one program, or the handling of input for more than one operation at the same time.
GS data processing
. **parallel processing (computers)**
RT **associative processing** (computers)
computational electromagnetics
concurrent processing
Connection Machine
distributed memory
hypercube multiprocessors
Illiac 3 computer
Illiac 4 computer
interprocessor communication
massively parallel processors
MIMD (computers)
response time (computers)
SIMD (computers)
sorting algorithms
supercomputers
systolic arrays
transputers
vector processing (computers)

parallel programming
GS computer programming
. **parallel programming**
RT multiprocessing (computers)
pipelining (computers)

parallel strip lines
USE **microstrip transmission lines**

parallelepipeds
GS geometry
. Euclidean geometry
. . polyhedrons
. . . **parallelepipeds**

parallelograms
GS geometry
. Euclidean geometry
. . polygons
. . . tetragons
. . . . **parallelograms**
. . . . . rhomboids

paralysis
GS diseases
. **paralysis**
injuries
. **paralysis**
RT disabilities
tremors

paramagnetic amplifiers
USE **masers**

paramagnetic resonance
GS resonance
. magnetic resonance
. . **paramagnetic resonance**
. . . electron paramagnetic resonance
RT absorption spectra
ferromagnetic resonance
nuclear magnetic resonance
paramagnetism

paramagnetism
GS magnetic properties
. **paramagnetism**
RT antiferromagnetism
Curie–Weiss law
diamagnetism
paramagnetic resonance

paramecia
GS animals
. protozoa
. . **paramecia**
microorganisms
. protozoa
. . **paramecia**

parameter identification
DEF The estimation of the unknown parameters of models of physical plants or processes from their dynamic response.
GS estimating
. **parameter identification**
identifying
. **parameter identification**
parameterization
. **parameter identification**
RT complex systems
control systems design
dynamic response
estimates
genetic algorithms
independent variables
least squares method
mathematical models
maximum likelihood estimates
observability (systems)
optimal control
optimization
prediction analysis techniques
probability theory
statistical analysis
steepest descent method
system identification
systems analysis
systems engineering

parameterization
GS **parameterization**
. parameter identification
RT **algorithms**
∞ applications of mathematics
dependent variables
derivation
dimensional analysis
∞ estimators
formalism
formulations
mathematical models
scale effect
semiempirical equations
system identification
units of measurement

parameters
USE **independent variables**

parametric amplifiers
DEF Inverting parametric devices used to amplify a signal without frequency translation from input to output. Used for parametric oscillators and reactance amplifiers.
UF *parametric oscillators*
reactance amplifiers
GS amplifiers
. **parametric amplifiers**
RT frequency converters
LC circuits
magnetostatic amplifiers
microwave amplifiers
negative resistance devices
power amplifiers
semiconductor devices

parametric diodes
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **parametric diodes**
. solid state devices
. . semiconductor devices
. . . **parametric diodes**
RT varactor diodes

parametric frequency converters
GS frequency converters
. **parametric frequency converters**
RT ∞ converters
phase modulation
up-converters

parametric oscillators
USE **parametric amplifiers**

parametrons
RT computer storage devices
magnetic cores
magnetic storage
oscillators
phase lock demodulators
thin films

paranasal sinuses
GS anatomy
. respiratory system
. . **paranasal sinuses**
sinuses
. **paranasal sinuses**
RT nose (anatomy)

paraplasts
GS plasters
. **paraplasts**
RT resins

parapsychology
USE **extrasensory perception**

parasites
GS **parasites**
. trypanosome
RT animals
blight
infestation

parasitic antennas
USE **parasitic elements (antennas)**

parasitic diseases
GS diseases
. infectious diseases
. . **parasitic diseases**
RT airborne infection
amoeba
blight
rust fungi
trypanosome

parasitic elements (antennas)
(added July 1993)
UF *parasitic antennas*
parasitic reflectors
passive elements
GS antenna components
. **parasitic elements (antennas)**
. . directors (antenna elements)
antennas
. **parasitic elements (antennas)**
. . directors (antenna elements)
RT antenna design
antenna radiation patterns
dipole antennas
directional antennas
log periodic antennas
radio receivers
reflectors
Yagi antennas

parasitic reflectors
USE **parasitic elements (antennas)**

parathyroid gland
GS anatomy
. glands (anatomy)
. . endocrine glands
. . . **parathyroid gland**
RT calcium metabolism

parawings
GS airfoils
. wings
. . flexible wings
. . . **parawings**
RT air drop operations
folding structures
hang gliders
parachutes
paragliders

parenteral functions
RT ∞ functions

parents
RT children
human beings

parity
DEF A symmetry property of a wave function.
RT BCH codes
coding
conservation
correction
equivalence
error detection codes
information theory
nuclear physics
particle spin

quantum numbers
quantum theory
strangeness
vector currents

∞ **parking**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT parking orbits
ramps (structures)

parking orbits
GS orbits
. spacecraft orbits
. . satellite orbits
. . . **parking orbits**
RT Earth orbits
Earth–Moon trajectories
flight optimization
interplanetary trajectories
low earth orbits
lunar orbits
lunar trajectories
orbital mechanics
∞ parking
planetary orbits
thrust programming
transfer orbits

Parkinson disease
GS diseases
. **Parkinson disease**
RT tremors

parks
GS land
. **parks**
. . national parks
. . . Yellowstone National Park (ID–MT–WY)
RT recreation
regional planning
urban development
urban planning

parotid gland
USE **salivary glands**

parsing algorithms
DEF Computer routines for the syntactic and/or semantic analysis and restructuring of natural language instructions or data for internal processing
GS mathematical logic
. algorithms
. . **parsing algorithms**
RT compilers
computer techniques
grammars
natural language processing
semantics
subroutines
syntax

partial differential equations
GS analysis (mathematics)
. real variables
. . differential equations
. . . **partial differential equations**
. . . . biharmonic equations
. . . . Burger equation
. . . . Cauchy–Riemann equations
. . . . elliptic differential equations
. . . . . Monge–Ampere equation
. . . . Euler–Cauchy equations
. . . . Fokker–Planck equation
. . . . Gauss equation
. . . . Helmholtz vorticity equation
. . . . Liouville equations
. . . . parabolic differential equations
. . . . Poisson equation
. . . . Vlasov equations
RT alternating direction implicit methods
Boltzmann–Vlasov equation
∞ equations
functional integration
kinetic equations
Laplace equation
method of characteristics
Neumann problem
reaction–diffusion equations
wave equations

partial pressure
DEF The pressure exerted by a designated component or components of a gaseous mixture
GS pressure
. **partial pressure**
. . oxygen tension
. . . hypoxemia
RT Dalton law
gas pressure
Henry law
internal pressure
Raoult law
residual gas
∞ tension
vapor pressure

particle acceleration
GS rates (per time)
. acceleration (physics)
. . **particle acceleration**
RT ∞ acceleration
electromagnetic acceleration
magnetic fields
plasma acceleration
racetracks (particle accelerators)
wave–particle interactions

particle accelerator targets
GS targets
. **particle accelerator targets**
RT ∞ accelerators
target thickness

particle accelerators
DEF Specifically, devices for imparting large kinetic energy to charged particles, such as electrons, protons, deuterons, and helium ions.
GS **particle accelerators**
. cyclic accelerators
. . betatrons
. . synchrocyclotrons
. . synchrotrons
. . . bevatron
. . . storage rings (particle accelerators)
. cyclotrons
. . geocyclotrons
. . microtrons
. . Oak Ridge isochronous cyclotron
. . omegatrons
. . synchrocyclotrons
. electron accelerators
. . betatrons
. ion accelerators
. linear accelerators
. Nimrod accelerator
. superconducting super collider
. synchrophasotrons
. Van de Graaff accelerators
RT ∞ accelerators
beam splitters
electron guns
elementary particles
ion sources
kaon production
neutron sources
nuclear particles
racetracks (particle accelerators)
railgun accelerators
SEPAC (payload)

particle beams
GS beams (radiation)
. **particle beams**
. . atomic beams
. . electron beams
. . . relativistic electron beams
. . ion beams
. . neutral beams
. . . molecular beams
. . . neutron beams
. . neutrino beams
. . pion beams
. . proton beams
RT beam splitters
electron acceleration
electron bombardment
flux (rate)
ion stripping
magnetic sails
phonon beams

particle charging
RT charged particles

particle collisions
GS collisions
. **particle collisions**
RT atomic collisions
atomic excitations
BGK model
dense plasmas
Faddeev equations
ionic collisions
kinetics
mean free path
molecular collisions
molecular excitation
nucleon–nucleon scattering
scattering

particle counters
USE **radiation counters**

particle decay
(added May 1994)
SN (LIMITED TO THE DECAY OF ELEMENTARY PARTICLES; EXCLUDES NUCLEAR DECAY)
GS decay
. **particle decay**
. . neutron decay
RT elementary particle interactions
fermions
hadrons
radioactive decay

particle density (concentration)
GS density (number/volume)
. **particle density (concentration)**
. . electron density (concentration)
. . . carrier density (solid state)
. . . electron density profiles
. . . ionospheric electron density
. . . magnetospheric electron density
. . electron distribution
. . . electron density profiles
. . ion density (concentration)
. . . ionospheric ion density
. . . magnetospheric ion density
. . . magnetospheric proton density

... proton density (concentration)
..... magnetospheric proton density
... plasma density
RT atmospheric density
ESRO 4 satellite
ion stripping
ionospheric composition
space density
spatial distribution

particle detectors
USE **radiation counters**

particle diffusion
GS diffusion
.. **particle diffusion**
... electron diffusion
... ionic diffusion
RT atomic beams
Boltzmann transport equation
diffusion coefficient
diffusion length
drop size
flux (rate)
gaseous self-diffusion
molecular diffusion
muon spin rotation
self diffusion (solid state)
thermophoresis

particle emission
GS emission
.. **particle emission**
... electron emission
..... field emission
..... photoelectric emission
..... secondary emission
... ion emission
... neutron emission
... thermionic emission
RT exhaust emission
expulsion
self sustained emission
stimulated emission

particle energy
GS **particle energy**
.. electron energy
... **electron states**
.. proton energy
RT ∞ energy
internal energy
kinetic energy
monochromatization
∞ particle intensity

particle flux
USE **flux (rate)**

particle flux density
SN (LIMITED TO PARTICLE EMISSION OR DETECTION RATE PER UNIT AREA)
GS **rates (per time)**
.. flux density
... radiant flux density
..... **particle flux density**
..... electron flux density
..... neutron flux density
..... proton flux density
RT Helios satellites
∞ particle intensity
radiancy
radiation counters
radiation pressure
solar constant
solar flux density

particle image displacement velocimetry
USE **particle image velocimetry**

particle image velocimetry
(added June 1993)
UF *particle image displacement velocimetry*
PIDV (velocimetry)
PIV (velocimetry)
GS mechanical measurement
.. flow measurement
... **particle image velocimetry**
.. velocity measurement
... **particle image velocimetry**
RT flow distribution
flow velocity
flow visualization
imaging techniques
laser doppler velocimeters
photographic measurement
photographic recording
two phase flow

particle in cell technique
GS analysis (mathematics)
.. numerical analysis
... approximation
..... **particle in cell technique**
RT ∞ cells
crystal lattices
flow equations
∞ methodology
vortex in cell technique

∞ **particle intensity**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT particle energy
particle flux density

particle interactions
GS **particle interactions**
.. elementary particle interactions
... electroweak interactions (field theory)
... high energy interactions
..... strong interactions (field theory)
... meson-meson interactions
... meson-nucleon interactions
... nuclear capture
..... electron capture
... nucleon-nucleon interactions
... weak energy interactions
..... weak interactions (field theory)
.. ion atom interactions
.. molecular interactions
... molecular collisions
.. nuclear interactions
... nuclear capture
..... electron capture
... spin-orbit interactions
..... electron capture
... weak interactions (field theory)
.. plasma-particle interactions
.. wave-particle interactions
RT Bragg curve
charm (particle physics)
chemical reactions
collision parameters
electron phonon interactions
electron scattering
Feynman diagrams
flavor (particle physics)
∞ interactions
neutral currents
nuclear reactions
photonuclear reactions
photophoresis
quantum chromodynamics

particle ladon jets
DEF Fluid, mainly issuing from a nozzle, that are turbulent and contain dispersed particles.
RT fuel flow
jet flow
particles
turbulent flow

particle mass
GS mass
.. **particle mass**
... electron mass
RT gravitons
magnetic rigidity
nuclides

particle motion
RT diffraction radiation
electrophoresis
falling
lattice vibrations
magnetic rigidity
mean free path
∞ motion
neutral sheets
photophoresis
recoilings
relativistic velocity
settling
thermophoresis

particle precipitation
DEF The precipitation of particles other than electrons and protons.
GS **particle precipitation**
.. electron precipitation
.. proton precipitation
RT atomic structure
charged particles
∞ precipitation

particle production
GS **particle production**
.. kaon production
.. pair production
.. photoproduction
RT comminution
corpuscular radiation
high energy interactions
nuclear radiation
nuclear reactions
particles
radioactivity
spallation

particle size distribution
GS size distribution
.. **particle size distribution**
RT dimensions
drop size
fineness
fines
fractions
grain size
particles
particulates
precipitation particle measurement
size determination
size separation
solids flow
thermophoresis

particle spin
GS spin
.. **particle spin**
... electron spin
... isotopic spin

. . nuclear spin
RT angular momentum
ising model
muon spin rotation
nuclear magnetic resonance
nuclear physics
parity
quenching (atomic physics)
spin resonance

particle telescopes
UF electron telescopes
GEP telescopes
Goddard experiment package telescope
proton telescopes
GS measuring instruments
. counters
. . radiation counters
. . . **particle telescopes**
. radiation measuring instruments
. . radiation counters
. . . **particle telescopes**
. telescopes
. . **particle telescopes**
RT Geiger counters
satellite-borne instruments
scintillation counters

particle theory
RT body kinematics
charm (particle physics)
collision parameters
electroweak model
flavor (particle physics)
grand unified theory
Higgs bosons
. . interactions
many body problem
plasma-particle interactions
quark models
standard model (particle physics)
string theory
supergravity
supersymmetry
∞ theories
unified field theory
weak energy interactions

particle tracks
RT chemical analysis
core sampling
cosmic rays
fossils
geochronology
lunar rocks
meteoroids
nuclear particles
radiation effects
stratigraphy
trace elements
∞ tracks

particle trajectories
GS trajectories
. **particle trajectories**
. . electron trajectories
RT bubble chambers
charged particles
electron optics
ionizing radiation
∞ motion
∞ paths
racetracks (particle accelerators)
∞ tracks

particles
DEF Elementary subatomic particles such as protons, electrons or neutrons. Very small pieces of matter. In celestial mechanics, hypothetical entities which respond to gravitational forces but which exert no appreciable gravitational force on other bodies, thus simplifying orbital computations.
GS **particles**
. aerosols
. . fog
. charged particles
. . antiprotons
. . energetic particles
. . . electrons
. . . . conduction electrons
. . . . free electrons
. . . . high energy electrons
. . . . . relativistic electron beams
. . . . hot electrons
. . . . N electrons
. . . . negatrons
. . . . photoelectrons
. . . . pi-electrons
. . . . polarons
. . . . solar electrons
. . . nuclei (nuclear physics)
. . . . alpha particles
. . . . deuterons
. . . . even-even nuclei
. . . . heavy nuclei
. . . . hypernuclei
. . . . odd-even nuclei
. . . . odd-odd nuclei
. . . . tritons
. . plasmas (physics)
. . . argon plasma
. . . beta particles
. . . boundary layer plasmas
. . . cold plasmas
. . . collisional plasmas
. . . . strongly coupled plasmas
. . . collisionless plasmas
. . . cosmic plasma
. . . cylindrical plasmas
. . . dense plasmas
. . . . plasma focus
. . . . strongly coupled plasmas
. . . electron plasma
. . . electron-positron plasmas
. . . elliptical plasmas
. . . helium plasma
. . . high temperature plasmas
. . . hydrogen plasma
. . . . deuterium plasma
. . . laser plasmas
. . . metallic plasmas
. . . . cesium plasma
. . . . uranium plasmas
. . . microplasmas
. . . nitrogen plasma
. . . nonequilibrium plasmas
. . . nonuniform plasmas
. . . oxygen plasma
. . . rarefied plasmas
. . . relativistic plasmas
. . . rotating plasmas
. . . semiconductor plasmas
. . . space plasmas
. . . . solar wind
. . . . stellar winds
. . . spherical plasmas
. . . thermal plasmas
. . . toroidal plasmas
. . ionized gases
. . Lorentz gas
. . magnetically trapped particles
. . radiation belts
. . . artificial radiation belts
. . . inner radiation belt
. . . outer radiation belt
. . . proton belts
. . partons
. . plasma clouds
. . . magnetic clouds
. . plasma jets
. . . radio jets (astronomy)
. . plasma layers
. . . plasma sheaths
. . plasma slabs
. . positrons
. . protons
. . . recoil protons
. . . solar protons
. corpuscular radiation
. . electron precipitation
. . electron radiation
. . . beta particles
. . . electron beams
. . . . relativistic electron beams
. . energetic particles
. . . electrons
. . . . conduction electrons
. . . . free electrons
. . . . high energy electrons
. . . . . relativistic electron beams
. . . . hot electrons
. . . . N electrons
. . . . negatrons
. . . . photoelectrons
. . . . pi-electrons
. . . . polarons
. . . . solar electrons
. . . nuclei (nuclear physics)
. . . . alpha particles
. . . . deuterons
. . . . even-even nuclei
. . . . heavy nuclei
. . . . hypernuclei
. . . . odd-even nuclei
. . . . odd-odd nuclei
. . . . tritons
. . . plasmas (physics)
. . . . argon plasma
. . . . beta particles
. . . . boundary layer plasmas
. . . . cold plasmas
. . . . collisional plasmas
. . . . . strongly coupled plasmas
. . . . collisionless plasmas
. . . . cosmic plasma
. . . . cylindrical plasmas
. . . . dense plasmas
. . . . . plasma focus
. . . . . strongly coupled plasmas
. . . . electron plasma
. . . . electron-positron plasmas
. . . . elliptical plasmas
. . . . helium plasma
. . . . high temperature plasmas
. . . . hydrogen plasma
. . . . . deuterium plasma
. . . . laser plasmas
. . . . metallic plasmas
. . . . . cesium plasma
. . . . . uranium plasmas
. . . . microplasmas
. . . . nitrogen plasma
. . . . nonequilibrium plasmas
. . . . nonuniform plasmas
. . . . oxygen plasma
. . . . rarefied plasmas
. . . . relativistic plasmas
. . . . rotating plasmas
. . . . semiconductor plasmas
. . . . space plasmas

solar wind
stellar winds
spherical plasmas
thermal plasmas
toroidal plasmas
primary cosmic rays
solar cosmic rays
radiation belts
artificial radiation belts
inner radiation belt
outer radiation belt
proton belts
solar corpuscular radiation
solar electrons
solar neutrinos
solar neutrons
solar protons
drops (liquids)
raindrops
dust
cosmic dust
interplanetary dust
meteoroid dust clouds
zodiacal dust
lunar dust
terrestrial dust belt
elementary particles
antiparticles
antineutrinos
antinucleons
antiprotons
positrons
beta particles
bosons
alpha particles
Higgs bosons
mesons
eta-mesons
hyperons
xi hyperons
kaons
meson resonance
X mesons
muons
omega-mesons
pions
vector mesons
rho-mesons
sigma-mesons
photons
xi hyperons
deuterons
electron-positron pairs
fermions
baryons
hyperons
xi hyperons
omega-mesons
rho-mesons
sigma-mesons
eta-mesons
leptons
antineutrinos
electrons
conduction electrons
free electrons
high energy electrons
relativistic electron beams
hot electrons
N electrons
negatrons
photoelectrons
pi-electrons
polarons
solar electrons
muons
neutrinos
solar neutrinos
positrons
meson resonance
X mesons
neutrons
cold neutrons
fast neutrons
photoneutrons
solar neutrons
thermal neutrons
protons
recoil protons
solar protons
gluons
gravitinos
gravitons
hadrons
baryons
hyperons
xi hyperons
omega-mesons
rho-mesons
sigma-mesons
mesons
eta-mesons
hyperons
xi hyperons
kaons
meson resonance
X mesons
muons
omega-mesons
pions
vector mesons
rho-mesons
sigma-mesons
magnetic monopoles
nucleons
partons
quarks
tachyons
flakes
metal particles
metal powder
platinum black
powdered aluminum
sintered aluminum powder
microparticles
mist
neutral particles
gravitinos
neutrons
cold neutrons
fast neutrons
photoneutrons
solar neutrons
thermal neutrons
nuclear particles
antiparticles
antineutrinos
antinucleons
antiprotons
positrons
beta particles
bosons
alpha particles
Higgs bosons
mesons
eta-mesons
hyperons
xi hyperons
kaons
meson resonance
X mesons
muons
omega-mesons
pions
vector mesons
rho-mesons
sigma-mesons
photons
xi hyperons
nucleons
photoelectrons
particulates
soot
pollen
powder (particles)
flines
metal powder
platinum black
powdered aluminum
sintered aluminum powder
relativistic particles
relativistic electron beams
trapped particles
magnetically trapped particles
radiation belts
artificial radiation belts
inner radiation belt
outer radiation belt
proton belts

RT air pollution
chemical clouds
∞ clouds
colloids
deuteron irradiation
dirt
dispersions
gas atomization
∞ grains
granular materials
grit
ion stripping
ions
neutral beams
neutron beams
nodules
nonpoint sources
particle laden jets
particle production
particle size distribution
positron annihilation
precipitation particle measurement
proton precipitation
smoke

particulate filters
USE **fluid filters**

particulate reinforced composites
(added January 1992)
GS composite materials
particulate reinforced composites
RT metal matrix composites
metal particles
microparticles
particulates
reinforcing materials

particulate sampling
GS sampling
particulate sampling
RT **assaying**
chemical analysis
concentration (composition)
identifying
particulates

particulates
GS particles
particulates

. . soot
RT aerosols
air pollution
air quality
air sampling
atmospheric composition
combustion products
contaminants
dispersions
dust
exhaust gases
fly ash
particle size distribution
particulate reinforced composites
particulate sampling
pollution control
pollution monitoring
smog
smoke
solid suspensions

∞ **partitions**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT curtains
partitions (mathematics)
partitions (structures)
septum

partitions (mathematics)
GS analysis (mathematics)
. combinatorial analysis
. . **partitions (mathematics)**
RT combinations (mathematics)
equivalence
∞ partitions
permutations

partitions (structures)
RT bulkheads
curtains
∞ partitions
thin walls
walls

partons
GS particles
. charged particles
. . **partons**
. elementary particles
. . **partons**
RT hadrons
leptons
quark parton model
quarks

parts
USE **components**

PAS
UF *perigee–apogee satellites*
GS artificial satellites
. **PAS**
RT elliptical orbits
twenty-four hour orbits

Pascal (programming language)
DEF High order computer programming language developed by Niklaus Wirth originally as an educational tool to foster structured programming
GS **languages**
. programming languages
. . **Pascal (programming language)**
RT compilers
computer programming

Paschen series
GS **spectra**
. radiation spectra
. . electromagnetic spectra
. . . line spectra
. . . . **Paschen series**
RT absorption spectra
atomic spectra
electron transitions
emission spectra
H lines
hydrogen

Pasiphae
(added January 1996)
DEF A natural satellite of Jupiter orbiting at a mean distance of 23,500,000 kilometers
GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . **Pasiphae**
RT Jupiter (planet)

passageways
DEF A pass-through between non-adjacent modules or spaces
GS **passageways**
. straits
. . Torres Strait
. transfer tunnels
RT approach
cavities
corridors
gaps
notches
openings
∞ paths
roads
∞ tunnels
underground structures
vestibules

passenger aircraft
UF *executive aircraft*
GS **passenger aircraft**
. BAC 111 aircraft
. BO–105 helicopter
. Boeing 707 aircraft
. Boeing 720 aircraft
. Boeing 727 aircraft
. Boeing 737 aircraft
. Boeing 747 aircraft
. Boeing 757 aircraft
. Boeing 767 aircraft
. Boeing 777 aircraft
. Boeing 2707 aircraft
. Breguet 941 aircraft
. C–33 aircraft
. C–35 aircraft
. C–46 aircraft
. Cessna 172 aircraft
. Cessna 206 aircraft
. Cessna 210 aircraft
. Cessna 402B aircraft
. CH–3 helicopter
. CH–46 helicopter
. CH–47 helicopter
. CH–54 helicopter
. Comet 4 aircraft
. commuter aircraft
. . ATR–72 aircraft
. CV–340 aircraft
. CV–440 aircraft
. CV–880 aircraft
. CV–990 aircraft
. DC 8 aircraft
. DC 10 aircraft
. DH 121 aircraft
. DH 125 aircraft
. DO–27 aircraft
. DO–28 aircraft
. DO–328 aircraft
. Electra aircraft
. European Airbus
. . A–300 aircraft
. . A–310 aircraft
. . A–320 aircraft
. . A–330 aircraft
. . A–340 aircraft
. F–27 aircraft
. F–28 helicopter
. F–28 transport aircraft
. G–1 aircraft
. G–222 aircraft
. H–19 helicopter
. H–53 helicopter
. H–56 helicopter
. HFB–320 aircraft
. HS–748 aircraft
. IL–62 aircraft
. IL–76 aircraft
. IL–86 aircraft
. IL–96 aircraft
. Jetstream aircraft
. L–1011 aircraft
. L–2000 aircraft
. MD 11 aircraft
. MD 80 aircraft
. Mystere 20 aircraft
. Mystere 50 aircraft
. OH–5 helicopter
. P–160 aircraft
. P–166 aircraft
. SE–210 aircraft
. T–39 aircraft
. TU–104 aircraft
. TU–124 aircraft
. TU–134 aircraft
. TU–144 aircraft
. TU–204 aircraft
. U–10 aircraft
. VC–10 aircraft
. Viscount aircraft
. Yak 40 aircraft
. YS–11 aircraft
RT air transportation
∞ aircraft
AN–22 aircraft
AN–24 aircraft
C–121 aircraft
cargo aircraft
civil aviation
commercial aircraft
DC 7 aircraft
E–2 aircraft
general aviation aircraft
ground effect machines
HC–3 helicopter
jet aircraft
light aircraft
light transport aircraft
∞ low wing aircraft
Mercure aircraft
MH–262 aircraft
∞ military aircraft
P–531 helicopter
PD–808 aircraft
rotary wing aircraft
Saab 105 aircraft
SC–7 aircraft
short haul aircraft
∞ subsonic aircraft
supersonic aircraft

supersonic transports
transport aircraft
TU-154 aircraft
turbofan aircraft
turboprop aircraft
V/STOL aircraft
water takeoff and landing aircraft

passengers
RT airline operations
automated guideway transit vehicles
automated mixed traffic vehicles
automated transit vehicles
payloads
rapid transit systems
riding quality
transportation

passes
USE **gaps (geology)**

passivation
USE **passivity**

passive elements
USE **parasitic elements (antennas)**

passive L-band radiometers
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . **passive L-band radiometers**
RT microwave frequencies
ultrahigh frequencies

passive nosetip technology
USE **PANT program**

passive satellites
UF *reflector satellites*
GS artificial satellites
. **passive satellites**
. . Beacon satellites
. . . Beacon Explorer A
. . . Explorer 22 satellite
. . Echo satellites
. . . Echo 1 satellite
. . . Echo 2 satellite
. . LAGEOS (satellite)
. . PAGEOS satellite
RT active satellites
communication satellites
Echo project
geodetic satellites
navigation satellites
synchronous satellites

passivity
UF *passivation*
RT anodizing
chemical attack
chemical properties
coatings
corrosion
corrosion prevention
corrosion resistance
deactivation
electrolysis
∞ inhibition
inhibitors
oxidation
oxidation resistance
rusting
siliconizing

paste (consistency)
DEF Mixtures with characteristic soft or plastic consistencies.
RT mixtures

pastes
DEF Adhesive compositions having a characteristic plastic-type consistency, that is, high order of yield values, such as that of pastes prepared by heating a mixture of starch and water and subsequently cooling the hydrolyzed product.
GS adhesives
. **pastes**
RT glues
plasters

pasteurizing
GS heating
. **pasteurizing**
RT purification
sterilization

patch antennas
(added June 1997)
GS antennas
. **patch antennas**
RT antenna arrays
antenna design
microstrip antennas
microwave antennas

patch tests
SN (CONDITIONS FOR ASSESSING FINITE ELEMENT METHOD CONVERGENCE AND STABILITY PROPERTIES)
RT convergence
finite element method
hydraulic fluids
structural analysis
∞ tests

patent applications
RT copyrights
inventions
licensing
patents
product development
technology utilization

patent policy
GS policies
. **patent policy**
RT intellectual property
inventions
patents
product development
regulations
rules

patents
GS intellectual property
. **patents**
RT claiming
grants
inventions
patent applications
patent policy

path planning
USE **trajectory planning**

Pathfinder nuclear reactor
GS nuclear electric power generation
. nuclear power reactors
. . **Pathfinder nuclear reactor**
nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . boiling water reactors
. . . . **Pathfinder nuclear reactor**
. nuclear power reactors
. . **Pathfinder nuclear reactor**

pathogenesis
RT cholera
diseases
pathogens

pathogens
DEF Disease-producing agents, usually referring to living organisms.
RT bacteria
Clostridium botulinum
pathogenesis

pathological effects
RT biological effects
carbon monoxide poisoning
cholera
diseases
∞ effects
physiological responses
stress (biology)

pathology
GS medical science
. **pathology**
. . human pathology
RT autopsies
diagnosis
dissection
hemorrhages
radiation therapy
veterinary medicine

∞ **paths**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *courses*
lanes
RT critical path method
diffraction paths
duality principle
flight paths
ground tracks
mean free path
meteor trails
multipath transmission
network analysis
operations research
optical paths
orbits
particle trajectories
passageways
PERT
routes
sound transmission
thermodynamics
trajectories

patients
RT human beings
human pathology
therapy

Patriot missile
DEF Surface to air, antiaircraft missile.
GS missiles
. surface to air missiles
. . **Patriot missile**
RT missile configurations
∞ rockets
weapons

patrols
RT reconnaissance

pattern distribution
USE **distribution (property)**

pattern method (forecasting)
GS forecasting
. technological forecasting
. . **pattern method (forecasting)**
management methods
. **pattern method (forecasting)**
RT Delphi method (forecasting)
estimating
∞ methodology
operations research
planning
predictions
probe method (forecasting)
technology assessment

pattern recognition
DEF The identification of shapes, forms and configurations by automatic means.
UF *automatic pattern recognition*
feature extraction
GS recognition
. **pattern recognition**
. . character recognition
. . graphology
RT change detection
clumps
cluster analysis
computer vision
corisort
edge detection
Feature Identification and Location Exper
gray scale
image analysis
image classification
multisensor applications
optical relay systems
principal components analysis
readers
repetition

pattern registration
RT comparison
image contrast
image correlators
image motion compensation
image reconstruction
image resolution
imaging techniques
magnetic signatures
matching

∞ **patterns**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT diffraction patterns
distribution (property)
drainage patterns
kurtosis
molds
photomasks
prototypes
radiation distribution
regularity
resins
speckle patterns
synthetic arrays
templates
test pattern generators
Widmanstatten structure

Patterson map
GS charts
. graphs (charts)
. . **Patterson map**
RT crystal lattices
crystal structure
lattice parameters

Pauli exclusion principle
GS quantum mechanics
. **Pauli exclusion principle**
wave functions
. **Pauli exclusion principle**
RT atomic structure
exclusion
fermions

pavements
RT asphalt
coatings
concretes
foundations
highways
roads
runways
streets

payload assist module
DEF Rocket vehicle with a spinning solid-propellant motor to attain injection velocity to place payload into intended orbits from the parking orbits of the STS.
GS modules
. **payload assist module**
rocket vehicles
. **payload assist module**
RT instrument packages
payloads
Space Shuttle payloads
space transportation system
spaceborne experiments

payload control
DEF Execution of events involved in operating the payload and supporting systems.
RT ∞ control
payloads
sounding rockets
space shuttles

payload delivery (STS)
DEF The transport of payloads via the Space Transportation System including ground to Earth orbit delivery by the Space Shuttle and orbit to orbit delivery via orbit transfer vehicles.
GS delivery
. **payload delivery (STS)**
RT Advanced Launch System (STS)
electric power supplies
orbit insertion
orbit transfer vehicles
orbital launching
payloads
power modules (STS)
solar arrays
space transportation system

payload deployment & retrieval system
DEF System of mechanical and control devices, with associated data systems, for payload handling in space.
GS payload deployment & retrieval system
. remote manipulator system
RT manipulators
NASA programs
orbit transfer vehicles
payloads
remote handling
space shuttles
∞ systems

payload integration
RT mission planning
payload integration plan
payloads
Space Shuttle payloads

payload integration plan
DEF Procedures providing for compatibility of spaceborne experiments with the carrier spacecraft (e.g., shuttle orbiter).
RT payload integration
payloads
∞ plans
Space Shuttle orbiters
Space Shuttle payloads
space transportation system
spaceborne experiments

payload mass ratio
GS ratios
. mass ratios
. . **payload mass ratio**
RT multistage rocket vehicles
piggyback systems
pressure ratio
propellant mass ratio

payload retrieval (STS)
GS retrieval
. **payload retrieval (STS)**
RT orbit transfer vehicles
orbital rendezvous
payload transfer
remote manipulator system
space shuttles
space transportation system
stationkeeping

payload stations
SN (THE POSITION OR MOUNTING PLACE FOR A PAYLOAD ONBOARD A ROCKET VEHICLE, SPACECRAFT, OR SPACE STATION; EXCLUDES ORBITAL STATIONS AND CREW WORKSTATIONS)
DEF The locations in the Space Shuttles' flight decks and cargo bay at which payloads are mounted.
GS stations
. **payload stations**
RT payloads
space transportation

payload transfer
DEF The in-space movement of payloads from point to point.
RT orbital servicing
payload retrieval (STS)
space maintenance

payloads
DEF Originally, the revenue producing portions of an aircraft's load, e.g., passengers, cargo, and mail. By extension, that which an aircraft, rocket, or spacecraft carries over and above which is necessary for the operation of the vehicle for its flight.
GS payloads
. EXPOS (Spacelab payload)
. OSTA-2 payload
. SEPAC (payload)
. sortie systems
. Space Shuttle payloads
. . Advanced Technology Laboratory
. . Astro missions (STS)
. . Atmospheric General Circulation Experiment
. . Earth radiation budget experiment
. . Earth Viewing Applications Laboratory
. . electromagnetic environment experiment

Get Away Specials (STS)
Halogen Occultation Experiment
OSS-1 payload
OSTA-1 payload
OSTA-3 payload
Physics and Chemistry Experiment in Space
plasma interaction experiment
Spacelab
X Ray Astrophysics Facility
space station payloads
Spacelab payloads
AMPS (satellite payload)
Atmospheric Cloud Physics Lab (Spacelab)
Atmospheric General Circulation Experiment
geophysical fluid flow cells
Solar Cell Calibration Facility
RT aircraft performance
aircraft specifications
annular suspension and pointing system
Apollo Lunar Surface Experiments Package
asteroid capture
EASEP
German Infrared Laboratory
instrument packages
LIRTS (telescope)
∞ loading
loads (forces)
passengers
payload assist module
payload control
payload delivery (STS)
payload deployment & retrieval system
payload integration
payload integration plan
payload stations
piggyback systems
Space Processing Applications Rocket
space transportation
space tugs
spaceborne experiments
warheads
∞ weight
weight (mass)

PBB
USE **polybrominated biphenyls**

PBRE (reactors)
USE **pebble bed reactors**

PCB
USE **polychlorinated biphenyls**

PCM (materials)
USE **phase change materials**

PCM (modulation)
USE **pulse code modulation**

PCM telemetry
GS telecommunication
telemetry
PCM telemetry
transmission
signal transmission
telemetry
PCM telemetry
RT differential pulse code modulation
pulse code modulation

PD-808 aircraft
UF *Douglas PD-808 aircraft*
Piaggio-Douglas PD-808 aircraft
GS jet aircraft
PD-808 aircraft
light aircraft
PD-808 aircraft
McDonnell Douglas aircraft
Douglas aircraft
PD-808 aircraft
monoplanes
PD-808 aircraft
Piaggio aircraft
PD-808 aircraft
RT ∞ aircraft
passenger aircraft

PDM (modulation)
USE **pulse duration modulation**

PDP 10 computer
UF *System 10 computer*
GS data processing equipment
computers
digital computers
PDP computers
PDP 10 computer

PDP 11 computer
GS data processing equipment
computers
digital computers
PDP computers
PDP 11 computer

PDP 11/20 computer
GS data processing equipment
computers
digital computers
PDP computers
PDP 11/20 computer

PDP 11/40 computer
GS data processing equipment
computers
digital computers
PDP computers
PDP 11/40 computer

PDP 11/45 computer
GS data processing equipment
computers
digital computers
PDP computers
PDP 11/45 computer

PDP 11/50 computer
GS data processing equipment
computers
digital computers
PDP computers
PDP 11/50 computer

PDP 11/70 computer
GS data processing equipment
computers
digital computers
PDP computers
PDP 11/70 computer

PDP 12 computer
GS data processing equipment
computers
digital computers
PDP computers
PDP 12 computer

PDP 15 computer
GS data processing equipment
computers
digital computers
PDP computers
PDP 15 computer

PDP 7 computer
GS data processing equipment
computers
digital computers
PDP computers
PDP 7 computer
RT PDP 9 computer

PDP 8 computer
GS data processing equipment
computers
digital computers
PDP computers
PDP 8 computer

PDP 9 computer
GS data processing equipment
computers
digital computers
PDP computers
PDP 9 computer
RT PDP 7 computer

PDP computers
GS data processing equipment
computers
digital computers
PDP computers
PDP 7 computer
PDP 8 computer
PDP 9 computer
PDP 10 computer
PDP 11 computer
PDP 11/20 computer
PDP 11/40 computer
PDP 11/45 computer
PDP 11/50 computer
PDP 11/70 computer
PDP 12 computer

Peacekeeper missile
USE **MX missile**

peacetime
RT electronic warfare
histories
international cooperation
international law
warfare

∞ **peaks**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT apexes
extremum values
maxima
mountains
plateaus

peaks (landforms)
UF *pinnacles*
GS landforms
peaks (landforms)
Pike's Peak (CO)
RT mountains
orography
topography

pearlite
DEF An aggregate in steel of ferrite and cementite
RT cementite
ferrites
iron alloys
microstructure
steels

Pearson distributions
GS functions (mathematics)
. probability density functions
. . **Pearson distributions**
statistical analysis
. probability density functions
. . **Pearson distributions**
statistical distributions
. **Pearson distributions**

peat
DEF Dark brown or black residuum produced from the partial decomposition and disintegration of mosses, hedges, trees, and other plants that grow in marshes and other wet places.
GS carbonaceous materials
. **peat**
fuels
. chemical fuels
. . hydrocarbon fuels
. . . fossil fuels
. . . . **peat**
organic materials
. **peat**
resources
. Earth resources
. . fossil fuels
. . . **peat**
RT coal
sediments

pebble bed reactors
UF *PBRE (reactors)*
GS nuclear reactors
. **pebble bed reactors**
RT reactor design
reactor technology

Peclet number
DEF A nondimensional number arising in problems of heat transfer in fluids.
GS dimensionless numbers
. **Peclet number**
ratios
. **Peclet number**
RT advection
heat transfer
Prandtl number
Reynolds number
thermal diffusion

peculiar galaxies
(added November 1988)
GS celestial bodies
. galaxies
. . **peculiar galaxies**
RT elliptical galaxies
galactic structure
spiral galaxies

peculiar stars
DEF Stars with spectra that cannot be conveniently fitted into any of the standard spectral classifications. They are denoted by a "p" after their spectral type.
GS celestial bodies
. **stars**
. . **peculiar stars**
. . . Ap stars
. . . Sigma Orionis
. . . symbiotic stars
RT A stars
B stars
hot stars
magnetic stars
stellar spectra
stellar spectrophotometry
stellar structure

pedals
RT levers
manual control

pediments
USE **piedmonts**

pediplains
USE **piedmonts**

pedology
USE **soil science**

PEEK
DEF A class of semicrystalline polymers called polyaryl ether ketones for use as molding compounds and for use as composite matrix materials. Used for polyetheretherketones.
UF *polyetheretherketones*
GS plastics
. synthetic resins
. . polyether resins
. . . **PEEK**
. . thermoplastic resins
. . . **PEEK**
resins
. synthetic resins
. . **polyether resins**
. . . **PEEK**
. . thermoplastic resins
. . . **PEEK**
RT carbon fiber reinforced plastics
ethers
ketones
polymer matrix composites
resin matrix composites

peeling
RT adhesion
cutting
debonding (materials)
delaminating
flaking
mechanical properties
shedding
∞ stripping

peening
GS metal finishing
. **peening**
. . shot peening
RT cold working
hardening (materials)
metal working
work hardening

Pegasus air-launched booster
(added May 1990)
GS launch vehicles
. **Pegasus air-launched booster**
rocket vehicles
. multistage rocket vehicles
. . **Pegasus air-launched booster**
RT air launching
B-52 aircraft

Pegasus computer
GS data processing equipment
. computers
. . **Pegasus computer**

Pegasus engine
USE **Bristol-Siddeley BS 53 engine**

Pegasus satellites
GS artificial satellites
. **Pegasus satellites**
RT Saturn project

pelagic zone
GS regions
. **pelagic zone**
RT oceanography

pellets
RT briquets
fuel capsules
granular materials
nuclear fuels
∞ shot

pellicle
RT thin films

paloma
GS animals
. protozoa
. . amoebs
. . . **paloma**
microorganisms
. protozoa
. . amoebs
. . . **paloma**

Peltier effects
DEF The effects which result in the production or absorption of heat at the junction of two metals on the passage of an electrical current.
RT ∞ effects
Seebeck effect
temperature effects
thermocouples
thermoelectric cooling
thermoelectricity
thermophysical properties

pelvis
GS anatomy
. musculoskeletal system
. . bones
. . . **pelvis**
RT girdles

penalties
GS law (jurisprudence)
. public law
. . **penalties**
RT air law
disciplining
judgments
legal liability
liabilities
prohibition
regulations

penalty function
DEF In mathematics, a function used in treating maxima and minima problems subject to restraints.
GS functions (mathematics)
. **penalty function**
RT constraints
∞ functions
maxima
minima
optimization

pencil beams
GS beams (radiation)
. **pencil beams**
RT antenna design
antenna radiation patterns
radar beams

pendulous gyroscopes
USE **gyroscopic pendulums**

pendulums
GS oscillators
. mechanical oscillators
. . **pendulums**
. . . gyroscopic pendulums
RT accelerometers
gravitation
momentum
oscillations
timing devices

penetrants
RT∞ agents
preservatives
retardants

penetrating particles
USE **corpuscular radiation**

penetration
DEF The depths to which one material extends into or penetrates another.
RT diffusion
drilling
fragmentation
hydrodynamic ram effect
impact
nuclear vulnerability
percolation
perforating
permeability
permeating
piercing
∞ saturation
seepage
terminal ballistics
terrain following
vulnerability

penetration ballistics
USE **terminal ballistics**

penetrometers
DEF Simple devices for measuring the penetrating power of a beam of x rays or other penetrating radiation by comparing transmission through various absorbers.
GS measuring instruments
. **penetrometers**
RT lunar soil

penicillin
GS drugs
. antibiotics
. . **penicillin**

Peninsular Ranges (CA)
GS landforms
. mountains
. . **Peninsular Ranges (CA)**
RT California

peninsulas
DEF Elongated bodies or stretches of land nearly surrounded by water and connected with a larger land area, usually by a neck or an isthmus. The term is derived from the Latin 'paeninsula' 'almost island.'
GS landforms
. **peninsulas**
. . Delmarva Peninsula (DE–MD–VA)
RT isthmuses
land
water

Penning discharge
DEF A direct current discharge where electrons are forced to oscillate between two opposed cathodes and are restrained from going to the surrounding anode by the presence of a magnetic field.
GS electric current
. electric discharges
. . **Penning discharge**
RT electrodeless discharges
gas ionization
ion motion
plasma generators

Penning effect
DEF An increase in the effective ionization rate of a gas due to the presence of a small number of foreign metastable atoms.
RT∞ effects
gas ionization
laser cooling
metastable atoms

Penning gages
GS measuring instruments
. pressure gages
. . vacuum gages
. . . ionization gages
. . . . **Penning gages**
vacuum apparatus
. vacuum gages
. . ionization gages
. . . **Penning gages**

Pennsylvania
GS nations
. United States
. . **Pennsylvania**
RT Allegheny Plateau (US)
Delaware Bay (US)
Delaware River Basin (US)
Ohio River (US)
Susquehanna River Basin (MD–NY–PA)

∞ **pens**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF styluses
RT enclosures
recording instruments

pentaboranes
GS boron compounds
. boron hydrides
. . boranes
. . . **pentaboranes**
hydrogen compounds
. hydrides
. . boron hydrides
. . . boranes
. . . . **pentaboranes**

pentachlorides
USE **chlorides**

pentaerythritol tetranitrate
USE **PETN**

pentanes
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . **pentanes**
. . . . . neopentane

pentanone
GS ketones
. **pentanone**
organic compounds
. **pentanone**
RT acetone
acetylacetone

pentobarbital
RT drugs
narcotics
sedatives

pentobarbital sodium
GS drugs
. **pentobarbital sodium**
. . reserpine
RT Nembutal (trademark)

pentodes
RT electron tubes
semiconductor devices
tetrodes
transistors
vacuum tubes

pentolite
GS explosives
. **pentolite**
propellants
. **pentolite**

pentose
GS organic compounds
. carbohydrates
. . sugars
. . . monosaccharides
. . . . **pentose**
. . . . . ribose
. . . . . xylose

penumbras
GS shadows
. **penumbras**
RT eclipses
umbras

PEOLE satellites
GS artificial satellites
. French satellites
. . **PEOLE satellites**
RT geophysical satellites

Peoples Democratic Republic of Germany
USE **East Germany**

peppers
RT∞ food

pepsin
GS biopolymers
. proteins
. . enzymes
. . . **pepsin**
organic compounds
. proteins
. . enzymes
. . . **pepsin**
RT pepsin

peptides
GS organic compounds
. **peptides**
. . polypeptides
. . . glutathione
. . . hypertensin
RT amino acids
aspartic acid
proteins

percentage
USE **ratios**

perception
GS **perception**
. binaural hearing

. motion perception
. sensory perception
. . auditory perception
. . consciousness
. . extrasensory perception
. . kinesthesis
. . olfactory perception
. . pain
. . . pain sensitivity
. . proprioception
. . . autokinesis
. . taste
. . touch
. . . tactile discrimination
. . vertical perception
. . vibration perception
. . visual perception
. . . critical flicker fusion
. . . space perception
. . . . autokinesis
. . . visual discrimination
. sound localization
RT acuity
adaptation
artificial intelligence
character recognition
cognition
color
contrast
electrocutaneous communication
frequency response
identifying
illusions
images
information processing (biology)
∞ interpretation
knowledge
legibility
monocular vision
perceptual time constant
reading
resolution
retinal adaptation
sensitivity
sensory deprivation
sensory feedback
symbols
thresholds (perception)
visibility
vision

perceptrons
USE **self organizing systems**

perceptual errors
DEF Deviations from accuracy in the perception of objects, shapes, colors, weights, etc., through the use of the senses.
RT display devices
visual perception
visual stimuli

perceptual time constant
GS constants
. time constant
. . **perceptual time constant**
RT perception
reaction time
sense organs
sensorimotor performance
velocity

perchlorates
GS halogen compounds
. chlorine compounds
. . **perchlorates**
. . . aluminum perchlorates
. . . ammonium perchlorates
. . . hydrazine perchlorates
. . . hydrogen perchlorate
. . . hydroxylammonium perchlorates
. . . lithium perchlorates
. . . magnesium perchlorates
. . . nitronium perchlorate
. . . potassium perchlorates
RT chlorates
perchloric acid

perchloric acid
GS **acids**
. **perchloric acid**
RT perchlorates

perchloryl fluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . **perchloryl fluorides**
. halides
. . fluorides
. . . **perchloryl fluorides**

percolation
RT beds (process engineering)
concentrating
diffusion
extraction
filtration
interstices
leaching
lysimeters
penetration
permeability
permeating
seepage
∞ separation
voids

Percus method
RT flow equations
integral equations
∞ methodology

percussion
RT detonation
impact
physical examinations
primers (explosives)

perfect gas
USE **ideal gas**

perfluoro compounds
GS **perfluoro compounds**
. perfluoroalkane
. perfluoroguanidine

perfluoroalkane
GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . difluoro compounds
. . . . **perfluoroalkane**
. . fluorine organic compounds
. . . . **perfluoroalkane**
organic compounds
. fluorine organic compounds
. . **perfluoroalkane**
perfluoro compounds
. **perfluoroalkane**

perfluoroguanidine
GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . fluorine organic compounds
. . . . **perfluoroguanidine**
organic compounds
. fluorine organic compounds
. . **perfluoroguanidine**
perfluoro compounds
. **perfluoroguanidine**
RT guanidines

perforated plates
GS structural members
. plates (structural members)
. . **perforated plates**
RT anisotropic plates
cavities
hole geometry (mechanics)
holes (mechanics)
openings
∞ perforation
porous boundary layer control
stress concentration

perforated shells
GS shells (structural forms)
. **perforated shells**
RT arches
cavities
enclosures
fairings
hole distribution (mechanics)
hole geometry (mechanics)
holes (mechanics)
housings
hulls (structures)
membrane structures
nacelles
∞ perforation
pressure vessel design
rocket engine cases
shell theory
stress concentration

perforating
RT burnthrough (failure)
cutting
drilling
formations
fracturing
gas injection
injection
metal cutting
metal working
penetration
∞ perforation
piercing
water injection

∞ **perforation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cavities
holes (mechanics)
perforated plates
perforated shells
perforating
piercing

∞ **performance**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aircraft performance
astronaut performance
comfort
complexity
computer systems performance
consistency
efficiency
effort

environments
evaluation
examination
fatigue (biology)
figure of merit
flight characteristics
human factors engineering
human performance
long term effects
mental performance
modulation transfer function
observation
operator performance
optical transfer function
output
performance tests
pilot performance
postflight analysis
propulsion system performance
quality
ratings
reliability
spacecraft performance
standards
task complexity
training evaluation

performance prediction
GS forecasting
. **performance prediction**
predictions
. **performance prediction**
RT evaluation
management
prediction analysis techniques
reliability
reliability analysis
reliability engineering
trend analysis

performance tests
SN (APPLY ONLY TO OPERATING EQUIPMENT)
RT accelerated life tests
acceptability
certification
checkout
computer systems performance
inspection
∞ performance
space vehicle checkout program
specifications
standards
∞ tests

perfusion
USE **diffusion**

periclase
GS chalcogenides
. oxides
. . metal oxides
. . . alkaline earth oxides
. . . . magnesium oxides
. . . . . **periclase**
magnesium compounds
. magnesium oxides
. . **periclase**

peridotite
UF kimberlite
GS rocks
. igneous rocks
. . **peridotite**
RT chromites
dunite
olivine
regolith
soils

perigee-apogee satellites
USE **PAS**

perigees
DEF Those orbital points nearest the Earth when the Earth is the center of attraction.
GS apsides
. **perigees**
RT apogees
Earth orbits
elliptical orbits
orbits
perilunes

perihelions
DEF Those points in solar orbits which are nearest the sun.
GS apsides
. **perihelions**
RT aphelions
elliptical orbits
orbital elements
orbits
solar orbits

perilunes
GS apsides
. **perilunes**
RT lunar orbits
lunar satellites
perigees

period doubling
DEF The bifurcation of a nonlinear system to two stable periodic cycles on its route to chaotic turbulence
GS branching (mathematics)
. **period doubling**
RT chaos
periodic functions
transition flow
turbulence
turbulent flow

period equations
USE **periodic functions**

periodic functions
UF *period equations*
GS analysis (mathematics)
. real variables
. . **periodic functions**
. . . trigonometric functions
. . . . cosine series
. . . . sine series
. . . . tangents
functions (mathematics)
. transcendental functions
. . **periodic functions**
. . . trigonometric functions
. . . . cosine series
. . . . sine series
. . . . tangents
RT Floquet theorem
Fourier analysis
period doubling

periodic orbits
USE **orbits**

periodic processes
USE **cycles**

periodic variations
UF *periodicity*
GS variations
. **periodic variations**
. . alternations
. . annual variations
. . diurnal variations
. . nocturnal variations
. . secular variations
RT autocorrelation
cataclysmic variables
climatology
cycles
dendrochronology
el Nino
extrapolation
Fourier analysis
long term effects
oscillations
oscillators
polar wandering (geology)
regularity
∞ rhythm
semiregular variable stars
Southern oscillation
trends
variability
variable stars

periodicals
UF *journals (documents)*
GS documents
. **periodicals**
RT ∞ journals
records

periodicity
USE **periodic variations**

periodicity (biology)
USE **rhythm (biology)**

peripheral circulation
GS circulation
. blood circulation
. . **peripheral circulation**

peripheral equipment (computers)
SN (EXCLUDES COMPUTER-CONTROLLED EQUIPMENT)
DEF Equipment that works in conjunction with a computer but is not part of the computer itself. Card or paper-tape readers or punches, magnetic tape handlers, or line printers are among items of peripheral equipment.
UF *auxiliary equipment (computers)*
GS computer components
. **peripheral equipment (computers)**
. . printers (data processing)
. . remote consoles
data processing equipment
. **peripheral equipment (computers)**
. . printers (data processing)
. . remote consoles
RT analog to digital converters
computer storage devices
computer systems design
data processing
digital to analog converters
∞ equipment
magnetic disks
magnetic tapes
modems
plotters

peripheral jet flow
GS fluid flow
. jet flow
. . **peripheral jet flow**
RT downwash
ground effect (aerodynamics)
ground effect machines

lift augmentation

peripheral nervous system
GS anatomy
. nervous system
. . **peripheral nervous system**
RT neuromuscular transmission
∞ systems

peripheral vision
GS vision
. **peripheral vision**
RT space perception
visual acuity
visual fields

peripheries
USE **boundaries**

periscopes
DEF Optical instruments which displace the line of sight parallel to itself to permit a view which may otherwise be obstructed.
GS optical equipment
. **periscopes**
RT binoculars
eyepieces
optical measuring instruments
telescopes
viewing

peritoneum
GS anatomy
. **peritoneum**
membranes
. **peritoneum**
RT abdomen
epithelium
tissues (biology)
viscera

permafrost
DEF Any soil, subsoil or other surficial deposit, or even bedrock, occurring in arctic or subarctic regions at a variable depth beneath the Earth's surface in which a temperature below freezing has existed continuously for a long time. Used for frozen soils.
UF frozen soils
GS soils
. **permafrost**
RT surfaces (ice)
Earth cryosphere
planetary cryospheres
polar regions

Permalloys (trademark)
GS alloys
. **Permalloys (trademark)**
magnetic materials
. ferromagnetic materials
. . **Permalloys (trademark)**
RT iron alloys
magnets
molybdenum alloys
nickel alloys
permanent magnets

permanent magnets
GS magnets
. **permanent magnets**
RT ferrimagnets
ferromagnetic materials
magnetic materials
Permalloys (trademark)

permanganates
GS manganese compounds
. **permanganates**
RT manganese ions

permeability
SN (EXCLUDES MAGNETIC PERMEABILITY)
DEF Of a magnetic material, the ratio of the magnetic induction to the magnetic field intensity in the same region. The ability to permit penetrations or passage. In this sense the term is applied particularly to substances which permit penetration or passage of fluids.
GS **permeability**
. dielectric permeability
RT aquifers
density (mass/volume)
diffusion
diffusivity
drainage
formations
infiltration
interstices
leaching
leakage
mechanical properties
penetration
percolation
permeating
∞ physical properties
porosity
∞ resistance
seepage
surface properties
void ratio
voids
wettability

permeating
RT ∞ absorption
desorption
dialysis
diffusion
dispersing
impregnating
osmosis
penetration
percolation
permeability
porosity
reverse osmosis
∞ saturation
sorption
transpiration

permissivity
RT compatibility
psychological factors

permittivity
UF *dielectric constant*
GS electrical properties
. dielectric properties
. . **permittivity**
RT electric fields
field strength

permutations
GS analysis (mathematics)
. combinatorial analysis
. . **permutations**
RT ∞ combination
combinations (mathematics)
partitions (mathematics)
set theory

perovskites
DEF **Minerals** with a close-packed lattice and the general formula ABX3 where A and B are metals and X is a nonmetal, usually O.
GS calcium compounds
. **perovskites**
minerals
. **perovskites**
titanium compounds
. titanates
. . **perovskites**

peroxides
GS chalcogenides
. oxides
. . anhydrides
. . . **peroxides**
. . . . inorganic peroxides
. . . . . hydrogen peroxide
. . . . organic peroxides
. . . . potassium peroxides
. . . . sodium peroxides
RT dioxides

Perseid meteoroids
GS celestial bodies
. meteoroid showers
. . **Perseid meteoroids**
. meteoroids
. . **Perseid meteoroids**

Pershing missile
GS missiles
. ballistic missiles
. . **Pershing missile**
. surface to surface missiles
. . **Pershing missile**
RT multistage rocket vehicles
solid propellant rocket engines

Persian Gulf
GS gulfs
. **Persian Gulf**
RT inlets (topography)

personal computers
GS data processing equipment
. computers
. . digital computers
. . . microcomputers
. . . . **personal computers**
. . . . . IBM personal computers
. . . . . Macintosh personal computers
RT computer techniques
VSAT (network)

personality
RT depersonalization
personnel selection

personality tests
RT intelligence tests
psychological tests
psychometrics
qualifications
∞ tests

personnel
GS personnel
. air traffic controllers (personnel)
. crews
. . flight crews
. . . spacecrews
. enemy personnel
. engineers
. flying personnel
. . astronauts
. . . orbital workers
. . cosmonauts

. . flight crews
. . . spacecrews
. . pilots (personnel)
. . . aircraft pilots
. . . . test pilots
. . ground crews
. . instructors
. . medical personnel
. . . flight nurses
. . . physicians
. . . surgeons
. . . . flight surgeons
. . navigators
. . operators (personnel)
. . . pilots (personnel)
. . . . aircraft pilots
. . . . . test pilots
. . police
. . programmers
. . scientists
RT ∞ complement
consulting
crew experiment stations
crew observation stations
crew workstations
depersonalization
deployment
employee relations
∞ estimators
helmet mounted displays
human resources
incentives
inhabitants
manpower
occupation
organizing
position (title)
qualifications
research management
resources
retirement
retraining
services
unionization
wage surveys

personnel development
RT ∞ development
employee relations
human resources
management
resources
training analysis

personnel management
GS management
. industrial management
. . **personnel management**
RT employee relations
human relations
human resources
leadership
management planning

personnel propulsion systems
USE **self maneuvering units**

personnel selection
GS selection
. **personnel selection**
. . pilot selection
RT aptitude
employment
intelligence tests
labor
personality
physical examinations
physiological tests

personnel subsystems
RT industries

Perspex (trademark)
GS plastics
. **Perspex (trademark)**

perspiration
UF *sweating*
RT body fluids
body temperature
evaporation
excretion
feces
heat acclimatization
humidity
Palmar sweat index
skin (anatomy)
sweat
transpiration

PERT
UF *program evaluation review technique*
RT commerce
contract management
critical path method
GERT
management analysis
management methods
management planning
∞ paths
program trend line analysis
project management

perturbation
DEF Any departure introduced into an assumed **steady state** of a **system**, or a small departure from a nominal path such as a desired trajectory. Usually used as **equivalent** to small perturbation. Specifically, a disturbance in the regular motion of a **celestial** body, the result of a force additional to that which causes the regular motion, specifically a gravitational force.
GS **perturbation**
. orbit perturbation
. . **satellite perturbation**
RT ∞ disturbances
four body problem
geodesy
gravitational instability
long term effects
many body problem
nutation
orbital mechanics
oscillations
oscillators
radiation pressure
Schach effect
three body problem
two body problem
variations

perturbation theory
UF *disturbance theory*
GS **perturbation theory**
. *virial theory*
RT Boussinesq approximation
celestial mechanics
disturbing functions
Hansen lunar theory
Hartree approximation
Hill lunar theory
Hill method
many body problem
operators (mathematics)
orbit perturbation
orbital elements
quantum theory
strange attractors
Taylor instability
∞ theories
von Zeipel method
wave functions
Wentzel–Kramer–Brillouin method
Yang–Mills fields
Yang–Mills theory

Peru
GS nations
. **Peru**
RT South America

pervesance
DEF The quotient of the space-charge-limited cathode current by the three-halves power of the anode voltage in a diode. Note: Pervsance is the constant G appearing in the Child-Langmuir-Schottky equation.
GS ratios
. **pervesance**
RT Child-Langmuir law
space charge
thermionic diodes
vacuum tubes
work functions

pesticides
GS poisons
. **pesticides**
. . **insecticides**
. . . Carbamates (tradename)
. . . . urethanes
. . . DDT
. . . dieldrin
. . . phenothiazines
RT crop dusting
environmental chemistry
toxicology

petals
RT plants (botany)

petechia
GS hemorrhages
. **petechia**
RT skin (anatomy)

PETN
UF *pentaerythritol tetranitrate*
GS esters
. organic nitrates
. . **PETN**
nitrogen compounds
. nitrates
. . organic nitrates
. . . **PETN**
RT explosives

Petrel sounding rocket
GS rocket vehicles
. sounding rockets
. . **Petrel sounding rocket**
RT ∞ rockets

Petri nets
DEF Abstract, formal models of the information flow in **systems** with discrete sequential or parallel events. The major use has been the modeling of hardware systems and software concepts of computers.
GS models
. mathematical models
. . **Petri nets**
networks

. **Petri nets**
RT consecutive events
dynamic models
graphs (charts)
information theory
∝ nets
sequencing
trees (mathematics)

petrogenesis
(added August 1997)
DEF Branch of petrology dealing with the origin and formation of rocks, particularly igneous rocks.
UF *petrogeny*
GS geology
. petrology
. . **petrogenesis**
RT geochronology
igneous rocks
magma
mineralogy
∝ origins
petrography
volcanology

petrogeny
USE **petrogenesis**

petrography
GS geology
. petrology
. . **petrography**
RT inliers (landforms)
petrogenesis
rocks
sedimentary rocks

petroleum
USE **crude oil**

petroleum products
DEF Materials derived from petroleum, natural gas, and asphalt deposits. Includes gasolines, diesel and heating fuels, lubricants, waxes, greases, petroleum coke, petrochemicals, and sulfur.
GS products
. **petroleum products**
. . asphalt
. . diesel fuels
. . gasoline
. . tars
RT butanes
crude oil
greases
kerogen
lubricants
lubricating oils
methane
natural gas
oils
plastics
polynuclear organic compounds

petrology
DEF That branch of geology dealing with the origin, occurrence, structure, and history of rocks, especially igneous and metamorphic rocks.
GS geology
. **petrology**
. . petrogenesis
. . petrography
RT cones (volcanoes)
formations
geochemistry
geological surveys
geophysics
impact melts
inliers (landforms)
Mars volcanoes
mineralogy
rocks
stratigraphy
volcanoes
volcanology

Pfaff equation
GS analysis (mathematics)
. **Pfaff equation**
RT differential equations
∝ equations
thermodynamics

PFM (modulation)
USE **pulse frequency modulation**

pH
RT acid base equilibrium
acid rain
acidity
acidosis
alkalinity
alkalosis
bases (chemical)
buffers (chemistry)
hydrogen ions

pH factor
RT acid base equilibrium
acidosis
alkalosis
hydrogen ions
ion concentration
soil sampling

phantastrons
GS circuits
. delay circuits
. . **phantastrons**
oscillators
. relaxation oscillators
. . **phantastrons**
RT feedback amplifiers

Phantom aircraft
USE **F-4 aircraft**

pharmacology
GS medical science
. **pharmacology**
. . psychopharmacology
RT **anesthesiology**
antiradiation drugs
bioprocessing
cyclic AMP
drugs
∝ medicine
motion sickness drugs
vasoconstrictor drugs
veterinary medicine

pharynx
GS anatomy
. respiratory system
. . **pharynx**

phase angle
USE **phase shift**

phase change materials
DEF Materials undergoing solid/liquid phase transformations and whose latent heat of fusion properties are used to store and deliver thermal energy, usually solar energy. Used for PCM (materials).
UF *PCM (materials)*
RT cerasin
condensing
fusion (melting)
heat of fusion
heat storage
heat transfer
liquid-solid interfaces
∝ materials
melting
organic materials
phase transformations
solar energy
solar energy conversion
solar heating
sublimation
Trombe walls
waxes
working fluids

phase coherence
RT ∝ coherence
coherence coefficient
coherent light
four-wave mixing
wave fronts

phase conjugation
DEF Technique for the removal of phase distortions during propagation of laser beams through the atmosphere.
GS conjugation
. **phase conjugation**
. . four-wave mixing

phase contrast
GS contrast
. **phase contrast**
RT diffraction patterns
electron microscopy
microscopy
optical measurement
optical paths
scanning electron microscopy
transmission electron microscopy

phase control
RT circuit protection
∝ control
phase locked systems
transformers

phase demodulators
GS demodulators
. **phase demodulators**
RT Bragg cells
modems

phase detectors
DEF Devices that continuously compare the phase of two signals and provide an output proportional to their difference in phase.
GS circuits
. **phase detectors**
. . synchroscopes
RT ∝ detectors
phase locked systems
signal detection
synchronism

phase deviation
DEF The peak difference between the instantaneous phase of the modulated wave and the carrier frequency.
RT amplitudes
modulated continuous radiation

signal analysis

phase diagrams
UF constitutional diagrams
equilibrium diagrams
eutectic diagrams
GS diagrams
. **phase diagrams**
RT alloys
binary systems (materials)
cluster variation method
critical temperature
eutectics
heat of fusion
heat treatment
intermetallics
liquid phases
liquids
liquidus
melting points
phase separation (materials)
phase stability (materials)
solid phases
solid solutions
solid suspensions
solubility
stoichiometry
transition points
transition temperature
vapor phases

phase error
GS errors
. **phase error**
RT ...cuit protection
...rror signals

phase lock demodulators
GS demodulators
. **phase lock demodulators**
RT correlation detection
parametrons

phase locked systems
RT **feedback** frequency modulation
optical coupling
phase control
phase detectors
synchronized oscillators
∞ systems
tracking filters

phase matching
DEF A way of maximizing the coupling between two systems used in second harmonic generation which happens mostly in crystals.
RT crystal optics
crystals
frequency multipliers
harmonic generations
laser outputs
lasers

phase modulation
DEF Angle modulation in which the angle of a sine wave carrier is caused to depart from the carrier angle by an amount proportional to the instantaneous value of the modulation wave. Combinations of phase and frequency modulation are commonly referred to as frequency modulation.
GS coding
. signal encoding
. . **phase modulation**
. . . FM/PM (modulation)
. . . phase shift keying
. . . . binary phase shift keying
. . . . quadrature phase shift keying
modulation
. **phase modulation**
. . FM/PM (modulation)
. . phase shift keying
. . . binary phase shift keying
. . . quadrature phase shift keying
RT amplitude modulation
Bragg cells
demodulation
demodulators
frequency modulation
modems
modulators
parametric frequency converters
pulse modulation
push-pull amplifiers
trellis coding

phase response
USE **frequency response**
phase shift

phase rule
GS rules
. **phase rule**
RT chemical equilibrium
degrees of freedom
∞ Gibbs equations

phase separation (materials)
(added December 1988)
RT binary systems (materials)
liquid phases
miscibility gap
phase diagrams
phase stability (materials)
phase transformations
∞ separation
solid phases
solubility

phase shift
DEF The phase difference of two periodically recurring phenomena of the same frequency, expressed in angular measure. The angle between the lines connecting a celestial body and the sun and a celestial body and the Earth. Used for phase angle and phase response.
UF *phase angle*
phase response
GS **phase shift**
. Sagnac effect
RT angles (geometry)
equalizers (circuits)
microwave switching
∞ phases
∞ shift

phase shift circuits
GS circuits
. **phase shift circuits**
. . circulators (phase shift circuits)
RT delay circuits
duplex operation
gyrators

phase shift keying
DEF The form of phase modulation in which the modulating function shifts the instantaneous phase of the modulated wave among predetermined discrete values.
GS coding
. signal encoding
. . phase modulation
. . . **phase shift keying**
. . . . binary phase shift keying
. . . . quadrature phase shift keying
keying
. **phase shift keying**
. . binary phase shift keying
. . quadrature phase shift keying
modulation
. phase modulation
. . **phase shift keying**
. . . binary phase shift keying
. . . quadrature phase shift keying
RT information theory
quadrature amplitude modulation
trellis coding

phase stability (materials)
(added July 1991)
GS stability
. **phase stability (materials)**
RT crystallization
phase diagrams
phase separation (materials)
phase transformations
∞ phases
stabilization

phase switching interferometers
GS measuring instruments
. interferometers
. . **phase switching interferometers**
RT radio astronomy
radio telescopes

phase transformations
GS **phase transformations**
. freezing
. . vibrational freezing
. . zone melting
. liquefaction
. . coal liquefaction
. martensitic transformation
. melting
. . arc melting
. . fusion (melting)
. . levitation melting
. . vacuum melting
. . zone melting
. vaporizing
. . boiling
. . . film boiling
. . . nucleate boiling
. . . . Leidenfrost phenomenon
. . evaporation
. . . evapotranspiration
. . . propellant evaporation
. . transpiration
. . flashing (vaporizing)
. . prevaporization
. . sublimation
RT cluster variation method
coal hardening
condensing
critical temperature
crystallization
directional solidification (crystals)
electron-hole drops
heat of fusion
Ising model
martensite
melt spinning
metamorphism (geology)
mushy zones
neel temperature
order-disorder transformations
Ostwald ripening
phase change materials
phase separation (materials)
phase stability (materials)
∞ phases
shape memory alloys

solidification
solids
syntactic alloys
∞ transformations
∞ transition
transition pressure
transition temperature

phase velocity
DEF Of a traveling plane wave at a single frequency, the velocity of an equiphase surface along the wave normal.
GS rates (per time)
. **phase velocity**
velocity
. **phase velocity**
RT electromagnetic radiation
group velocity
Landau damping
propagation velocity
quantum mechanics
traveling waves
wave fronts
wave propagation

phase-space integral
GS analysis (mathematics)
. **phase-space integral**
RT classical mechanics
Euclidean geometry
hyperspaces
state vectors

phased arrays
GS arrays
. **phased arrays**
RT antenna arrays
laser arrays
linear arrays
monopulse antennas
seismographs
steerable antennas

∞ **phases**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cycles
liquid phases
lunar phases
phase shift
phase stability (materials)
phase transformations
solid phases
terminator lines
vapor phases

phenacetin
USE **acetanilide**

phenanthrene
GS isomers
. **phenanthrene**
organic compounds
. hydrocarbons
. . **phenanthrene**
RT anthracene
dyes

phenobarbital
RT drugs
narcotics
sedatives

phenol formaldehyde
RT formaldehyde
phenolic resins
resins

phenolic epoxy resins
GS plastics
. synthetic resins
. . thermosetting resins
. . . epoxy resins
. . . . **phenolic epoxy resins**
. . . phenolic resins
. . . . **phenolic epoxy resins**
resins
. synthetic resins
. . thermosetting resins
. . . epoxy resins
. . . . **phenolic epoxy resins**
. . . phenolic resins
. . . . **phenolic epoxy resins**
RT adhesives
amines
crosslinking

phenolic resins
GS plastics
. synthetic resins
. . thermosetting resins
. . . **phenolic resins**
. . . . micarta
. . . . phenolic epoxy resins
resins
. synthetic resins
. . thermosetting resins
. . . **phenolic resins**
. . . . micarta
. . . . phenolic epoxy resins
RT carbon–phenolic composites
phenol formaldehyde

phenology
DEF A branch of science dealing with the relations between climate and periodic biological phenomena.
RT activity cycles (biology)
biometeorology
climatology
coastal ecology
ecology
migration
molting
phenomenology
rhythm (biology)

phenols
GS hydroxyl compounds
. alcohols
. . **phenols**
. . . bisphenols
. . . cresols
. . . phloroglucinol
. . . thymol
RT thiols

phenomenology
RT case histories
experimentation
medical phenomena
mesoscale phenomena
phenology

phenothiazines
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azines
. . . . **phenothiazines**
poisons
. pesticides
. . insecticides
. . . **phenothiazines**
pyrazines
. azines
. . **phenothiazines**

phenylalanine
GS acids
. amino acids
. . alanine
. . . **phenylalanine**
. carboxylic acids
. . alanine
. . . **phenylalanine**
organic compounds
. amino acids
. . alanine
. . . **phenylalanine**
. carboxylic acids
. . alanine
. . . **phenylalanine**

phenyls
GS **phenyls**
. polybrominated biphenyls
. polychlorinated biphenyls
. polyphenyls
. . tetraphenyls
. . triphenyls
. terphenyls
RT phosphene
propargyl groups

Philco 2000 computer
GS data processing equipment
. computers
. . digital computers
. . . **Philco 2000 computer**

Philippines
GS landforms
. islands
. . Pacific islands
. . . **Philippines**
nations
. **Philippines**

Philips ionization gages
GS measuring instruments
. pressure gages
. . vacuum gages
. . . ionization gages
. . . . **Philips ionization gages**
vacuum apparatus
. vacuum gages
. . ionization gages
. . . **Philips ionization gages**
RT pressure measurement

philosophy
GS knowledge
. **philosophy**
. . paradoxes
RT literature
∞ logic
mathematical logic

phloroglucinol
GS hydroxyl compounds
. alcohols
. . phenols
. . . **phloroglucinol**
RT chemical indicators
resins

phobias
GS **phobias**
. fear
. . fear of flying
RT anxiety
emotional factors

Phobos
DEF A satellite of Mars orbiting at a mean distance of 9,400 kilometers.
GS celestial bodies
. natural satellites
. . Mars satellites
. . . Phobos
RT Deimos
Mars (planet)

Phoebe
DEF A satellite of Saturn orbiting at a mean distance of 12,960,000 kilometers.
GS celestial bodies
. natural satellites
. . Saturn satellites
. . . Phoebe
RT Saturn (planet)

Phoebus nuclear reactor
GS nuclear reactors
. Phoebus nuclear reactor
RT KIWI reactors
nuclear engine for rocket vehicles
nuclear rocket engines

Phoenix (AZ)
GS cities
. Phoenix (AZ)
RT Arizona

Phoenix quadrangle (AZ)
GS landforms
. Phoenix quadrangle (AZ)
RT Arizona
geodetic surveys
mapping

Phoenix sounding rocket
GS rocket vehicles
. multistage rocket vehicles
. . Phoenix sounding rocket
. sounding rockets
. . Phoenix sounding rocket
RT solid propellant rocket engines

phonemes
GS speech
. phonemes
RT languages
linguistics
phonemics
phonetics
psycholinguistics
speech recognition
words (language)

phonemics
GS linguistics
. phonemics
RT intelligibility
languages
phonemes
phonetics
psycholinguistics
speech
speech defects
speech recognition
words (language)

phonetics
GS linguistics
. phonetics
speech
. phonetics
RT acoustics
intelligibility
languages
phonemes
phonemics
speech defects
speech recognition
verbal communication
words (language)

phonoarteriography
RT arteries
blood circulation
phonocardiography

phonocardiograms
USE phonocardiography

phonocardiography
UF *phonocardiograms*
vibrocardiography
GS bioengineering
. biometrics
. . cardiography
. . . phonocardiography
. . . . echocardiography
RT ballistocardiography
electrocardiography
heart
heart diseases
phonoarteriography
vectorcardiography

phonon beams
GS beams (radiation)
. phonon beams
elastic waves
. phonons
. . phonon beams
electromagnetic radiation
. thermal radiation
. . phonon beams
elementary excitations
. phonons
. . phonon beams
RT corpuscular radiation
particle beams
photon beams
Umklapp process

phonons
GS elastic waves
. phonons
. . phonon beams
elementary excitations
. phonons
. . phonon beams
RT crystal structure
lattice vibrations
plasmons
polarons
sound waves
Umklapp process

phoria
GS diseases
. eye diseases
. . phoria

phosgene
GS gases
. phosgene
halogen compounds
. chlorine compounds
. . chlorides
. . . phosgene
. halides
. . chlorides
. . . phosgene
poisons
. phosgene
RT∞ chemical compounds

phosphates
GS phosphorus compounds
. phosphates
. . adenines
. . adenosine triphosphate
. . ammonium phosphates
. . calcium phosphates
. . cyclic AMP
. . diphosphates
. . . adenosine diphosphate
. . indium phosphates
. . monazite sands
. . phosphene
. . polynucleotides
. . potassium phosphates
. . pyridine nucleotides
. . uridylic acid
RT kreep
phosphoric acid
Skydrol (trademark)

phosphazene
DEF A ring or chain polymer that contains alternating phosphorus and nitrogen atoms, with two substituents on each phosphorus atom.
GS organic compounds
. organic phosphorus compounds
. . phosphazene
phosphorus compounds
. organic phosphorus compounds
. . phosphazene
RT nitrogen compounds
phosphines
phosphonitriles
polymer chemistry

phosphene
GS organic compounds
. organic phosphorus compounds
. . phosphene
phosphorus compounds
. organic phosphorus compounds
. . phosphene
. phosphates
. . phosphene
RT luminosity
phenyls
retina
vision

phosphides
GS phosphorus compounds
. phosphides
. . boron phosphides
. . gallium phosphides
. . indium phosphides
. . manganese phosphides
. . schreibersite

phosphines
GS hydrogen compounds
. hydrides
. . phosphines
phosphorus compounds
. phosphines
RT phosphazene

phosphonitriles
GS nitriles
. phosphonitriles
nitrogen compounds
. phosphonitriles
organic compounds
. organic phosphorus compounds
. . phosphonitriles

phosphorus compounds
. organic phosphorus compounds
. . phosphonitriles
RT phosphazene

phosphonium compounds
GS phosphorus compounds
. phosphonium compounds
RT∞ chemical compounds

phosphorescence
DEF Emission of light which continues after the exciting mechanism has ceased.
GS electromagnetic properties
. optical properties
. . phosphorescence
emission
. light emission
. . luminescence
. . . fluorescence
. . . . phosphorescence
RT afterglows
bioluminescence
chemiluminescence
phosphors
plasma radiation
scintillation
trapping

phosphoric acid
GS acids
. phosphoric acid
phosphorus compounds
. phosphoric acid
RT phosphates

phosphoric acid fuel cells
DEF Long life fuel cells for the low to medium wattage range which use phosphoric acid as an electrolyte.
GS electric generators
. direct power generators
. . fuel cells
. . . phosphoric acid fuel cells
electrochemical cells
. fuel cells
. . phosphoric acid fuel cells
RT biochemical fuel cells
electrolytic cells
energy technology
hydrogen oxygen fuel cells
regenerative fuel cells
total energy systems

phosphors
DEF Phosphorescent substances such as zinc sulfide, which emit light when excited by radiation, as on the scope of a cathode ray tube.
GS phosphors
. radiophosphors
RT fluorescence
image intensifiers
laser induced fluorescence
mercury lamps
phosphorescence
photographic film

phosphorus
GS chemical elements
. phosphorus
. . phosphorus isotopes
. . . phosphorus 32

phosphorus 32
GS chemical elements
. nuclides
. . isotopes
. . . phosphorus isotopes
. . . . phosphorus 32
. . . radioactive isotopes
. . . . phosphorus 32
. phosphorus
. . phosphorus isotopes
. . . phosphorus 32

phosphorus compounds
GS phosphorus compounds
. diethyl hydrogen phosphite (DEHP)
. organic phosphorus compounds
. . phosphazene
. . phosphene
. . phosphonitriles
. . uridylic acid
. phosphates
. . adenines
. . adenosine triphosphate
. . ammonium phosphates
. . calcium phosphates
. . cyclic AMP
. . diphosphates
. . . adenosine diphosphate
. . indium phosphates
. . monazite sands
. . phosphene
. . polynucleotides
. . potassium phosphates
. . pyridine nucleotides
. . uridylic acid
. phosphides
. . boron phosphides
. . gallium phosphides
. . indium phosphides
. . manganese phosphides
. . schreibersite
. phosphines
. phosphonium compounds
. phosphoric acid
. phosphorus oxides
. phosphorus polymers
RT∞ chemical compounds
Group 5A compounds

phosphorus isotopes
GS chemical elements
. nuclides
. . isotopes
. . . phosphorus isotopes
. . . . phosphorus 32
. phosphorus
. . phosphorus isotopes
. . . phosphorus 32

phosphorus metabolism
GS metabolism
. phosphorus metabolism

phosphorus oxides
GS chalcogenides
. oxides
. . phosphorus oxides
phosphorus compounds
. phosphorus oxides

phosphorus polymers
GS phosphorus compounds
. phosphorus polymers
RT∞ polymers

phosphorylation
GS chemical reactions
. phosphorylation

photics
RT light (visible radiation)
∞ optics

photo reconnaissance spacecraft
GS military spacecraft
. reconnaissance spacecraft
. . photo reconnaissance spacecraft
RT∞ spacecraft

photoabsorption
GS energy absorption
. radiation absorption
. . electromagnetic absorption
. . . photoabsorption
RT∞ absorption
photoexcitation

photoacoustic microscopy
GS microscopy
. photoacoustic microscopy
RT acoustic microscopes
acousto-optics
ceramics
nondestructive tests
photoacoustic spectroscopy

photoacoustic spectroscopy
DEF An optical technique for investigating solid and semisolid materials, in which the sample is placed in a closed chamber filled with a gas and illuminated with monochromatic radiation of any desired wavelength, and with intensity modulated at some acoustic frequency. Absorption of radiation results in a periodic heat flow from the sample, which generates sound detectable with a sensitive microphone.
GS spectroscopy
. photoacoustic spectroscopy
RT absorption spectra
absorptivity
acousto-optics
laser applications
laser spectroscopy
photoacoustic microscopy

photocathodes
DEF Electrodes used for obtaining a photoelectric emission when irridated. Used for photoelectric cathodes.
UF *photoelectric cathodes*
GS electrodes
. cathodes
. . tube cathodes
. . . photocathodes
RT dark current
electrode materials
image converters
image intensifiers
image orthicons
light amplifiers
microchannels
orthicons
photoelectric cells
photoelectric emission
photoelectric materials
photomultiplier tubes

photocells
USE **photoelectric cells**

photochemical oxidants
DEF Any of the chemicals which enter into oxidation reactions in the presence of light or other radiant energy.
GS oxidizers
. photochemical oxidants
RT air pollution
atmospheric chemistry
nitrogen oxides
ozone
photooxidation

photochemical reactions
DEF Chemical reactions which involve either the absorption or emission of radiation. Used for photochemistry and photoreduction.
UF *photochemistry*
photoreduction
GS chemical reactions
. **photochemical reactions**
. . photochromism
. . photodecomposition
. . photolysis
. . photooxidation
. . photosynthesis
. . radiolysis
RT association reactions
atmospheric chemistry
charge transfer
oxetane polymers
sodalite

photochemistry
USE **photochemical reactions**

photochromism
GS chemical reactions
. photochemical reactions
. . **photochromism**
RT color photography
sodalite

photoclinometry
USE **photogrammetry**

photoconductive cells
DEF Photoelectric cells whose electrical resistance varies with the amount of illumination falling upon the sensitive area of the cell.
GS photoelectric cells
. **photoconductive cells**
RT∞ cells
photovoltaic cells

photoconductivity
DEF The conductivity increase exhibited by some nonmetallic materials, resulting from the free carriers generated when photon energy is absorbed in electronic transitions. The rate at which free carriers are generated, the mobility of the carriers, and the length of time they persist in conducting states (their lifetime) are some of the factors that determine the amount of conductivity change. Used for photoresistivity.
UF *photoresistivity*
GS electrical properties
. electrical resistivity
. . **photoconductivity**
electromagnetic properties
. optical properties
. . **photoconductivity**
photoelectricity
. photoelectric effect
. . **photoconductivity**
transport properties
. electrical resistivity
. . **photoconductivity**
RT∞ conductivity
mercury cadmium tellurides
photoconductors
square wells

photoconductors
UF *photoresistors*
GS conductors
. **photoconductors**
semiconductors (materials)
. **photoconductors**
RT mercury cadmium tellurides
photoconductivity
photodiodes
photoelectric cells
photoelectric materials
photometers
phototransistors
resistors
tunnel junctions

photocurrents
USE **electric current**
photoelectric emission

photodecomposition
GS chemical reactions
. photochemical reactions
. . **photodecomposition**
decomposition
. **photodecomposition**
radiation chemistry
. **photodecomposition**
RT electromagnetic absorption
photodetachment
photolysis

photodetachment
RT photodecomposition
photoionization

photodetectors
USE **photometers**

photodiodes
DEF Diodes designed to produce photocurrent by absorbing light. Photodiodes are used for the conversion of optical power to electrical power.
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **photodiodes**
. solid state devices
. . semiconductor devices
. . . **photodiodes**
optoelectronic devices
. **photodiodes**
RT dark current
focal plane devices
ion implantation
lasers
mercury cadmium tellurides
MSM (semiconductors)
photoconductors
photoelectric cells
photoelectric materials
phototransistors
phototubes
pushbroom sensor modes
SIS (semiconductors)
solar cells
x ray detectors

photodissociation
DEF The dissociation (splitting) of a molecule by the absorption of a photon. The resulting components may be ionized in the process (photoionization).
GS decomposition
. **photodissociation**
dissociation
. **photodissociation**
radiation chemistry
. **photodissociation**
RT electromagnetic absorption
photoexcitation
photolysis

photoelastic analysis
UF *photoelastic stress measurement*
RT fringe multiplication
Moire effects
∞ optics
photographic measurement
∞ polarization
polarization (waves)
stress analysis
stress measurement
temperature inversions

photoelastic materials
RT∞ materials
photoelasticity

photoelastic stress measurement
USE **photoelastic analysis**

photoelasticity
GS electromagnetic properties
. **photoelasticity**
. . photoviscoelasticity
mechanical properties
. elastic properties
. . **photoelasticity**
. . . photoviscoelasticity
RT birefringence
dichroism
photoelastic materials
polarized light
prisms
refraction
stress analysis

photoelectric cathodes
USE **photocathodes**

photoelectric cells
DEF Transducers which convert electromagnetic radiation in the infrared, visible, and ultraviolet regions into electrical quantities such as voltage, current, or resistance. Used for photocells.
UF *photocells*
GS photoelectric cells
. photoconductive cells
. photovoltaic cells
. . solar cells
. . . vertical junction solar cells
RT∞ cells
dark current
direct power generators
∞ electric cells
electrochemical cells
electrode materials
energy absorption films
photocathodes
photoconductors
photodiodes
photometers
photomultiplier tubes
phototransistors
phototubes
solar generators
transducers

photoelectric effect
DEF The emission of an electron from a surface as the surface absorbs a photon of electromagnetic radiation. Electrons so emitted are termed photoelectrons.
GS photoelectricity
. **photoelectric effect**
. . photoconductivity
. . photoelectric emission
. . photoionization

. . photovoltaic effect
RT∞ effects
photoelectrons

photoelectric emission
DEF The emission of electrons from atoms or molecules. Used for photocurrents, photoemission, and photoemissivity.
UF *photocurrents*
photoemission
photoemissivity
GS emission
. particle emission
. . electron emission
. . . photoelectric emission
photoelectricity
. photoelectric effect
. . photoelectric emission
RT electrical properties
external surface currents
negative electron affinity
photocathodes
photoexcitation
photoionization
photopeak
photovoltages
photovoltaic effect
stimulated emission
work functions

photoelectric generators
GS electric generators
. direct power generators
. . photoelectric generators
. . . photovoltaic cells
. . . . solar cells
. . . . . vertical junction solar cells
RT∞ generators
photoelectrochemical devices
solar energy conversion
solar generators
thermoelectric generators

photoelectric materials
UF *photoemitters*
RT electrode materials
electron emission
∞ materials
photocathodes
photoconductors
photodiodes
photoelectricity
photoelectrons
phototransistors
phototubes
photovoltaic cells

photoelectric photometers
USE electrophotometers

photoelectricity
UF *photoelectronics*
photosensors
GS photoelectricity
. photoelectric effect
. . photoconductivity
. . photoelectric emission
. . photoionization
. . photovoltaic effect
RT Compton effect
electrical properties
electricity
optical properties
photoelectric materials
photoelectrons
photovoltages

photoelectrochemical devices
DEF Electrochemical devices powered by light or other incident radiation to produce electricity and/or chemical fuels (e.g., hydrogen).
RT∞ devices
electrochemical cells
electrode materials
energy technology
photoelectric generators
photoelectrochemistry
photon beams
solar energy conversion

photoelectrochemistry
DEF The study of the interaction between impinging light energy and the electropotential of the chemical changes in the electrode, electrolytic solution, or a photosensitive membrane.
GS electrochemistry
. photoelectrochemistry
RT∞ chemistry
photoelectrochemical devices

photoelectromagnetic detectors
USE photoelectromagnetic effects
radiation measuring instruments

photoelectromagnetic effects
UF *photoelectromagnetic detectors*
RT∞ effects
excitons
intermetallics

photoelectron spectroscopy
GS spectroscopy
. photoelectron spectroscopy
RT electron emission
spectroscopic analysis

photoelectronics
USE electronics
photoelectricity

photoelectrons
DEF Electrons which have been ejected from their parent atoms by interaction between those atoms and high energy photons.
GS particles
. charged particles
. . energetic particles
. . . electrons
. . . . photoelectrons
. corpuscular radiation
. . energetic particles
. . . electrons
. . . . photoelectrons
. elementary particles
. . fermions
. . . leptons
. . . . electrons
. . . . . photoelectrons
. nuclear particles
. . photoelectrons
RT electron emission
photoelectric effect
photoelectric materials
photoelectricity
photoionization
photomagnetic effects
photoneutrons
photonuclear reactions
photovoltaic effect

photoemission
USE photoelectric emission

photoemissivity
USE emissivity
photoelectric emission

photoemitters
USE photoelectric materials

photoengraving
RT micromachining
photomechanical effect
printing

photoexcitation
(added December 1992)
GS excitation
. photoexcitation
potential energy
. electric potential
. . quantum wells
. . . photoexcitation
RT fluorescence
molecular excitation
photoabsorption
photodissociation
photoelectric emission
photoionization
photoluminescence

photogeology
GS geology
. photogeology
RT aerial photography
Earth Resources Survey aircraft
geological surveys
geomorphology
ice mapping
natural gas exploration
photogrammetry
photomapping
reconnaissance
thematic mapping

photogoniometers
GS measuring instruments
. goniometers
. . photogoniometers
. optical measuring instruments
. . photogoniometers
optical equipment
. optical measuring instruments
. . photogoniometers
RT angles (geometry)
diffractometers
etalons
interferometers
monochromators
spectrometers

photogrammetry
DEF The art or science of obtaining reliable measurements by means of photography. Used for photoclinometry.
UF *photoclinometry*
GS photographic measurement
. photogrammetry
RT aerial photography
mapping
photogeology
photoreconnaissance
projectors
relief maps
stereophotography
surveys
terrain analysis

photograph interpretation
USE photointerpretation

photographic developers
UF *developers (photography)*
RT∞ development
photographs

photography

photographic emulsions
DEF The light-sensitive coatings on photographic film consisting usually of silver halide.
GS mixtures
. dispersions
. . emulsions
. . . photographic emulsions
. . . . nuclear emulsions
. solutions
. . photographic emulsions
. . . nuclear emulsions
RT photography
photosensitivity

photographic equipment
GS photographic equipment
. cameras
. . Baker–Nunn camera
. . ballistic cameras
. . CCD cameras
. . Delft camera
. . diffraction limited cameras
. . faint object camera
. . high speed cameras
. . . framing cameras
. . I2S cameras
. . Lallemand cameras
. . multispectral band cameras
. . panoramic cameras
. . pinhole cameras
. . Schmidt cameras
. . streak cameras
. . television cameras
. photographic processing equipment
. photographic rectifiers
RT ∞ equipment
lenses
optical equipment
optical filters
photography
photometers
projectors

photographic film
GS photographic film
. microfilms
RT ∞ films
magazines (supply chambers)
optical data storage materials
optical filters
phosphors
photographs
photography
polymeric films
Sabatier reaction

photographic measurement
GS photographic measurement
. photogrammetry
RT dosimeters
∞ measurement
optical correction procedure
optical measurement
particle image velocimetry
photoelastic analysis
photography
photointerpretation
photometry
photoreconnaissance
spectrometers

photographic plates
RT glass
photographic processing
photographs
photography
∞ plates

photographic processing
RT darkrooms
photographic plates
photographs
photography
printing
∞ processing

photographic processing equipment
GS photographic equipment
. photographic processing equipment
RT darkrooms
photography
reproduction (copying)

photographic recording
GS recording
. photographic recording
RT data recording
high speed photography
hologrammetry
intermittency hypothesis
particle image velocimetry
photographs
photography
recording instruments

photographic rectifiers
GS optical equipment
. photographic rectifiers
photographic equipment
. photographic rectifiers
RT ∞ condensers
photography

photographic tracking
GS tracking (position)
. photographic tracking
RT cinetheodolites
optical tracking
photography
satellite tracking
space detection and tracking system

photographs
GS photographs
. cloud photographs
. lunar photographs
. Mars photographs
. microphotographs
. motion pictures
. photomicrographs
RT display devices
images
mosaics
optical correction procedure
photographic developers
photographic film
photographic plates
photographic processing
photographic recording
photography
pixels
representations
spatial filtering
video tapes
visual aids
xerography

photography
GS imagery
. photography
. . aerial photography
. . all sky photography
. . astronomical photography
. . autoradiography
. . black and white photography
. . chronophotography
. . cinematography
. . cloud photography
. . color photography
. . electron photography
. . electro-optical photography
. . fractography
. . frame photography
. . high speed photography
. . holography
. . . acoustical holography
. . . microwave holography
. . . spectde holography
. . . white light holography
. . infrared imagery
. . lunar photography
. . metric photography
. . microwave photography
. . multispectral photography
. . . infrared photography
. . . . color infrared photography
. . . radar photography
. . orthophotography
. . photomicrography
. . rocket-borne photography
. . shadowgraph photography
. . . Schlieren photography
. . spaceborne photography
. . . satellite-borne photography
. . spectrophotography
. . stereoscopy
. . . stereophotography
. . streak photography
. . ultraviolet photography
. . ultraviolet photometry
. . underwater photography
. . urography
RT brightness distribution
brightness temperature
cameras
CCD cameras
cloud photographs
darkrooms
Earth observations (from space)
Earth resources
evaporography
exposure
graphic arts
HS-801 aircraft
ice mapping
imaging techniques
lunar photographs
mapping
Mars photographs
microphotographs
multispectral band cameras
multispectral band scanners
panoramic cameras
photographic developers
photographic emulsions
photographic equipment
photographic film
photographic measurement
photographic plates
photographic processing
photographic processing equipment
photographic recording
photographic rectifiers
photographic tracking
photographs
photointerpretation
photolithography
photomapping

photomaps
photomasks
photomechanical effect
photoreconnaissance
pinhole cameras
pixels
projectors
radiography
rapid ballistics identification
reproduction (copying)
timber inventory
video tapes
wave front reconstruction
xerography

photointerpretation
UF *photograph interpretation*
RT aerial photography
∞ analyzing
change detection
ground truth
∞ interpretation
photographic measurement
photography
photomapping
photoreconnaissance
sea truth
spatial filtering

photoionization
DEF The ionization of an atom or molecule by the collision of a high energy photon with the particle.
GS emission
. photoionization
ionization
. photoionization
photoelectricity
. photoelectric effect
. . photoionization
RT atmospheric ionization
auroral ionization
auroral irradiation
electron emission
gas ionization
laser induced fluorescence
photodetachment
photoelectric emission
photoelectrons
photoexcitation

photolithography
DEF The process of making a printing plate by exposing a design photographically on a sensitized emulsion and removing unwanted portions chemically.
GS printing
. lithography
. . photolithography
RT microelectronics
micromodules
photography

photoluminescence
DEF Luminescence produced by the absorption of radiant flux, distinguished from ordinary reflection by a time delay and usually, an upward shift in a wavelength.
GS emission
. light emission
. . luminescence
. . . phosphorescence
. . . . triboluminescence
. . . . x ray fluorescence
RT fluorescence
laser induced fluorescence
photoexcitation
photoluminescent bands
photorefractivity
porous silicon

photoluminescent bands
GS spectra
. spectral bands
. . photoluminescent bands
RT absorption spectra
∞ bands
emission spectra
photoluminescence
triboluminescence

photolysis
GS chemical reactions
. photochemical reactions
. . photolysis
decomposition
. photolysis
radiation chemistry
. photolysis
RT cracking (chemical engineering)
electrolysis
photodecomposition
photodissociation
radiolysis

photomagnetic effects
RT deuterons
∞ effects
gamma rays
photoelectrons
spin decoupling

photomapping
GS mapping
. photomapping
RT aerial photography
Coastal Zone Color Scanner
color photography
DMSP satellites
Earth resources
geodesy
geology
gnomonic projection
hologrammetry
ice mapping
maps
ocean color scanner
photogeology
photography
photointerpretation
rocket–borne photography
satellite–borne photography
soil mapping
spaceborne photography
thematic mapping
thermal mapping
topography

photomaps
GS maps
. photomaps
RT aerial photography
photography
relief maps
satellite–borne photography
spaceborne photography
thematic mapping

photomasks
DEF In the production of integrated circuit devices, repeated arrays of microphotographs of the circuit patterns on glass substrates used to form successive patterns on single wafers often of submicrometer sizes.
RT arrays
circuit diagrams
integrated circuits
masking
microelectronics
micromachining
microphotographs
∞ patterns
photography
printed circuits
solid state devices
substrates
wafers

photomechanical effect
RT ∞ effects
lithography
micromachining
photoengraving
photography
printing

photometers
DEF Instruments for measuring the intensity of light or the relative intensity of a pair of lights. Used for microphotometers and photodetectors.
UF *microphotometers*
photodetectors
GS measuring instruments
. optical measuring instruments
. . photometers
. . . electrophotometers
. . . ultraviolet spectrometers
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping Spectrometer
. . . ultraviolet spectrophotometers
. radiation measuring instruments
. . photometers
. . . electrophotometers
. . . ultraviolet spectrometers
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping Spectrometer
. . . ultraviolet spectrophotometers
optical equipment
. optical measuring instruments
. . photometers
. . . electrophotometers
. . . ultraviolet spectrometers
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping Spectrometer
. . . ultraviolet spectrophotometers
RT bolometers
densitometers
electrophotometry
ellipsometers
horizon scanners
infrared spectrophotometers
microdensitometers
nephelometers
optical measurement
photoconductors
photoelectric cells
photographic equipment
photometry
phototranslators
polarimeters
pyranometers
radiometers
reflectometers
spectrometers
spectrophotometers
telephotometry
transmissometers
ultraviolet detectors

x ray detectors

photometry
DEF The study of the measurement of the intensity of light.
GS optical measurement
. photometry
. . astronomical photometry
. . . stellar spectrophotometry
. . electrophotometry
. . infrared photometry
. . spectrophotometry
. . . stellar spectrophotometry
. . telephotometry
. . ultraviolet photometry
. . visual photometry
RT chemical analysis
colorimetry
illuminating
∞ illumination
light (visible radiation)
luminance
photographic measurement
photometers
polarimetry
reflectance
spectroscopy
transmittance

photomicrographs
GS photographs
. photomicrographs
RT photomicrography

photomicrography
UF *micrography*
GS imagery
. photography
. . photomicrography
RT black and white photography
electron microscopes
metallography
microscopes
microscopy
microstructure
photomicrographs

photomultiplier tubes
DEF Phototubes with one or more dynodes between its photocathode and output electrode. Used for electron multipliers and multiplier phototubes.
UF *electron multipliers*
multiplier phototubes
GS amplifiers
. current amplifiers
. . photomultiplier tubes
. . . frequency modulation photomultipliers
electron tubes
. cold cathode tubes
. . phototubes
. . . photomultiplier tubes
. . . . frequency modulation photomultipliers
RT cathodes
channel multipliers
dynodes
electrodes
microchannel plates
microwave tubes
multipactor discharges
multipliers
photocathodes
photoelectric cells
scintillating fibers
scintillation counters

secondary emission

photon absorptiometry
GS density measurement
. photon absorptiometry
RT absorption spectra
densitometers
electromagnetic absorption
energy absorption
gamma ray absorptiometry
gamma ray absorption
multiphoton absorption
radiation absorption

photon beams
GS beams (radiation)
. photon beams
electromagnetic radiation
. photon beams
RT beam waveguides
gamma ray beams
incident radiation
laser outputs
light beams
optical paths
optical scanners
phonon beams
photoelectrochemical devices
photonic propulsion
photons
reflected waves
refracted waves
thermal blooming

photon density
GS rates (per time)
. flux density
. . photon density
RT squeezed states (quantum theory)

photon–electron interaction
RT elastic scattering
electron scattering
elementary particle interactions
∞ interactions
Umklapp process

photoneutrons
GS nuclear radiation
. photoneutrons
particles
. elementary particles
. . fermions
. . . neutrons
. . . . photoneutrons
. neutral particles
. . neutrons
. . . photoneutrons
RT baryons
nuclear particles
nuclear reactions
photoelectrons
photonuclear reactions
vector dominance model

photonic propulsion
GS propulsion
. low thrust propulsion
. . photonic propulsion
. . . laser propulsion
. spacecraft propulsion
. . photonic propulsion
. . . laser propulsion
RT electromagnetic propulsion
photon beams

photonic switching
USE **optical switching**

photonics
RT electro–optics
fiber optics
lasers
light emitting diodes
optical data processing
optical switching
optical waveguides
optoelectronic devices
photons

photons
DEF According to the quantum theory of radiation, the elementary quantities of radiant energy. They are regarded as discrete quantities having a momentum equal to $h\nu/c$, where h is the Planck constant, ν is the frequency of the radiation, and c is the speed of light in a vacuum. Photons are never at rest, have no electric charges and no magnetic moments, but they have spin moments. The energy of a photon (the unit quantum of energy) is equal to $h\nu$.
GS particles
. elementary particles
. . bosons
. . . photons
. nuclear particles
. . bosons
. . . photons
RT annihilation reactions
cosmic rays
electromagnetic radiation
gamma rays
light (visible radiation)
nuclear radiation
optical properties
photon beams
photonics
photonuclear reactions
photoproduction
Planck's constant
quantum theory
∞ radiation
rotons

photonuclear reactions
GS nuclear reactions
. photonuclear reactions
RT electromagnetic interactions
light (visible radiation)
particle interactions
photoelectrons
photoneutrons
photons
photoproduction

photooxidation
GS chemical reactions
. oxidation
. . photooxidation
. photochemical reactions
. . photooxidation
RT association reactions
photochemical oxidants

photopeak
RT amplitude distribution analysis
photoelectric emission
pulse amplitude
scintillation counters

photophilic plants
GS plants (botany)
. photophilic plants
RT light (visible radiation)
photosensitivity

photophoresis
DEF Production of unidirectional motion in a collection of very fine particles, suspended in a gas or falling in a vacuum, by a powerful beam of light.
RT aerosols
light (visible radiation)
particle interactions
particle motion
radiation pressure

photoplasticity
GS mechanical properties
. plastic properties
. . photoplasticity

photopolymers
(added July 1995)
DEF Polymers created by photochemical processes.
RT diffractive optics
display devices
holography
∞ polymers

photoproduction
GS electromagnetic interactions
. photoproduction
particle production
. photoproduction
RT electromagnetic absorption
pair production
photons
photonuclear reactions
radioactive decay
vector dominance model

photoreceptors
GS anatomy
. sense organs
. . photoreceptors
receptors (physiology)
. photoreceptors
RT eye (anatomy)
photosensitivity
retina
sensitometry
visual pigments
Young–Helmholtz theory

photoreconnaissance
GS reconnaissance
. photoreconnaissance
RT aerial reconnaissance
Airborne Integrated Reconnaissance System
black and white photography
DMSP satellites
Earth Resources Survey aircraft
ground truth
HS–801 aircraft
photogrammetry
photographic measurement
photography
photointerpretation
spectral reconnaissance

photoreduction
USE photochemical reactions

photorefractivity
(added May 1995)
GS electromagnetic properties
. optical properties
. . refractivity
. . . photorefractivity
reactivity
. photorefractivity
RT crystal optics
gratings (spectra)
optical waveguides
photoluminescence

photoresistivity
USE photoconductivity

photoresistors
USE photoconductors

photosensitivity
DEF The property of a material whereby its chemical makeup is altered by exposure to light.
GS sensitivity
. photosensitivity
. . light adaptation
. . phototropism
RT light (visible radiation)
photographic emulsions
photophilic plants
photoreceptors
sensitometry
thresholds (perception)
visual pigments

photosensors
USE photoelectricity
radiation measuring instruments

photosphere
DEF The intensely bright portion of the sun visible to the unaided eye.
GS photosphere
. solar granulation
RT chromosphere
faculae
solar atmosphere
solar physics
spicules
starspots
stellar activity
sun
sunspots

photostresses
GS stresses
. photostresses

photosynthesis
DEF A process operating in green plants in which carbohydrates are formed under the influence of light with chlorophyl serving as a catalyst.
GS chemical reactions
. photochemical reactions
. . photosynthesis
RT algae
carbohydrates
Chlorella
chlorophylls
chloroplasts
crop growth
respiration

photothermal conversion
DEF Conversion into thermal energy from optical radiation by a photoabsorptive or photoselective material.
GS energy conversion
. solar energy conversion
. . photothermal conversion
. . . thermophotovoltaic conversion
RT ∞ conversion
energy absorption films
energy conversion efficiency
energy technology
selectivity
solar collectors
solar dynamic power systems
solar energy absorbers
solar reflectors
solar thermal electric power plants
spectral sensitivity
thermal energy
thermodynamics

photothermotropism
USE anisotropy
phototropism
temperature effects

phototransistors
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . transistors
. . . . phototransistors
optoelectronic devices
. phototransistors
RT junction transistors
photoconductors
photodiodes
photoelectric cells
photoelectric materials
photometers
phototubes

phototropism
UF *photothermotropism*
GS sensitivity
. photosensitivity
. . phototropism
RT color
crop vigor
optical properties
plants (botany)

phototubes
GS electron tubes
. cold cathode tubes
. . phototubes
. . . photomultiplier tubes
. . . . frequency modulation photomultipliers
RT cathodes
dark current
electrodes
flying spot scanners
gas discharge tubes
microwave tubes
photodiodes
photoelectric cells
photoelectric materials
phototransistors

photoviscoelasticity
GS electromagnetic properties
. optical properties
. . photoviscoelasticity
. photoelasticity
. . photoviscoelasticity
mechanical properties
. elastic properties
. . photoelasticity
. . . photoviscoelasticity
. . viscoelasticity
. . . photoviscoelasticity

photovoltages
GS potential energy
. electric potential
. . photovoltages
RT photoelectric emission
photoelectricity

photovoltaic effect
threshold voltage

photovoltaic cells
DEF Photoelectric detectors capable of directly generating an electric current in response to irridation.
GS electric generators
. direct power generators
. . photoelectric generators
. . . photovoltaic cells
. . . . solar cells
. . . . . vertical junction solar cells
electronic equipment
. solid state devices
. . semiconductor devices
. . . photovoltaic cells
. . . . solar cells
. . . . . vertical junction solar cells
photoelectric cells
. photovoltaic cells
. . solar cells
. . . vertical junction solar cells
RT amorphous silicon
∞ cells
electrochemical cells
photoconductive cells
photoelectric materials
short circuit currents
SIS (semiconductors)
solar generators

photovoltaic conversion
GS energy conversion
. solar energy conversion
. . photovoltaic conversion
. . . thermophotovoltaic conversion
RT ∞ conversion
photovoltaic effect
solar arrays
solar cells

photovoltaic effect
DEF The production of a voltage difference across a pn junction resulting from the absorption of photon energy. The voltage difference is caused by the internal drift of holes and electrons.
GS electrical properties
. photovoltaic effect
photoelectricity
. photoelectric effect
. . photovoltaic effect
RT ∞ effects
photoelectric emission
photoelectrons
photovoltages
photovoltaic conversion
threshold voltage

phreatophytes
GS plants (botany)
. phreatophytes
RT trees (plants)

phthalates
GS esters
. phthalates

phthalocyanin
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . phthalocyanin
RT pigments

phugoid oscillations
USE oscillations
pitch (inclination)

phylloquinone
UF *vitamin K*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . phylloquinone
. lipids
. . phylloquinone
vitamins
. phylloquinone

physical chemistry
GS physical chemistry
. cryochemistry
. quantum chemistry
RT aerothermochemistry
atmospheric chemistry
chemical analysis
∞ chemistry
computational chemistry
molecular dynamics
nuclear chemistry
∞ physics
thermochemistry
thermodynamics

physical constants testing reactor
USE nuclear research and test reactors
water cooled reactors

physical endurance
USE physical fitness

physical examinations
RT flight fitness
mobile quarantine facility
percussion
personnel selection

physical exercise
UF *exercise*
gymnastics
GS physical exercise
. hyperkinesia
RT angina pectoris
athletes
atrophy
fatigue (biology)
hypokinesia
physical fitness
running
swimming
treadmills
walking

physical factors
GS physiological factors
. physical factors
RT ∞ physics
work

physical fitness
UF *physical endurance*
GS fitness
. physical fitness
RT athletes
competition
exercise physiology
flight fitness
physical exercise
physiological tests
posture
sports medicine
swimming
treadmills
work capacity

physical optics
RT crystal optics
fiber optics
geometrical optics
gradient index optics
optical properties
∞ optics
quantum optics
quantum theory
∞ theories

∞ **physical properties**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT acoustic properties
adsorptivity
Bragg angle
buoyancy
chemical properties
color
density (mass/volume)
diffusivity
durability
eddy currents
elastic properties
electrical properties
electromagnetic properties
fusibility
∞ high resistance
hygroscopicity
hysteresis
impedance
internal friction
isotropy
magnetic dipoles
magnetic properties
mechanical properties
optical properties
permeability
polymorphism
propellant properties
∞ properties
surface properties
thermal expansion
thermodynamic properties
thixotropy
transmissivity
transport properties
virtual properties
viscosity

∞ **physical sciences**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT astronomy
∞ chemistry
geology
life sciences
∞ metallurgy
meteorology
mineralogy
oceanography
∞ physics
∞ science

physical work
UF *exertion*
GS work
. physical work
RT effort
horsepower
tasks
treadmills
work capacity
workloads (psychophysiology)

physicians
GS personnel
. medical personnel

. . physicians
RT stethoscopes

∞ physics
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT astrophysics
atmospheric physics
atomic physics
biophysics
branching (physics)
charm (particle physics)
cloud physics
combustion
combustion physics
condensed matter physics
degenerate matter
electrophysics
field theory (physics)
flavor (particle physics)
geophysics
health physics
Health Physics Research Reactor
kinetics
low temperature physics
magnetomechanics (physics)
matter (physics)
∞ mechanics (physics)
∞ molecular physics
neutron physics
nuclear physics
nuclei (nuclear physics)
physical chemistry
physical factors
∞ physical sciences
plasma physics
plasmas (physics)
polymer physics
psychophysics
quenching (atomic physics)
radio physics
reactor physics
reentry physics
rigid rotors (plasma physics)
∞ science
selection rules (nuclear physics)
solar physics
∞ solid state physics
strange attractors
theoretical physics

Physics and Chemistry Experiment in Space
DEF A group of Space Shuttle payloads consisting of various space experiments. Used for PACE.
UF *PACE*
GS experimentation
. Physics and Chemistry Experiment in Space
payloads
. Space Shuttle payloads
. . Physics and Chemistry Experiment in Space
spaceborne experiments
. Physics and Chemistry Experiment in Space
RT ∞ chemistry
space flight

physiochemistry
GS biochemistry
. physiochemistry
RT ∞ chemistry
exercise physiology
molecular biology
organic chemistry
physiology
psychotropic drugs
∞ science

physiography
USE **geomorphology**

physiological acceleration
DEF The acceleration experienced by a human or an animal test subject in an accelerating vehicle.
GS rates (per time)
. physiological acceleration
RT ∞ acceleration
acceleration (physics)
acceleration stresses (physiology)
deceleration
gravitational physiology
impact acceleration

physiological defenses
GS physiological defenses
. immune systems
RT acquired immunodeficiency syndrome
antibodies
antigens
biocompatibility
∞ defense
inoculum
interferon

physiological effects
GS physiological effects
. physiological responses
. . hemodynamic responses
RT biological effects
bone demineralization
cholera
comfort
diving (underwater)
∞ effects
electrolyte metabolism
environmental engineering
environments
exercise physiology
geotropism
gonads
gravitational physiology
head down tilt
heat acclimatization
heat stroke
hematopoiesis
hematopoietic system
human reactions
noise pollution
radiation effects
reaction time
relative biological effectiveness (RBE)
shock (physiology)
space adaptation syndrome
sports medicine

physiological factors
GS physiological factors
. physical factors
RT astronaut performance
chemical defense
chemical warfare
flight stress (biology)
noise pollution
sex factor

physiological responses
GS physiological effects
. physiological responses
. . hemodynamic responses
responses
. physiological responses
. . hemodynamic responses
RT desynchronization (biology)
evoked response (psychophysiology)
gravitational physiology
pathological effects

physiological telemetry
USE **biotelemetry**

physiological tests
GS physiological tests
. body sway test
. carboxyhemoglobin test
. ear pressure test
. electronystagmography
. vestibular tests
. Weber test
RT cardiac output
cardiography
certification
environmental index
environmental tests
mobile quarantine facility
personnel selection
physical fitness
pilot selection
psychomotor performance
sensorimotor performance
stroke volume
Taylor manifest anxiety scale
∞ tests
treadmills
urinalysis

physiology
DEF The science that treats of the functions of living organisms or their parts, as distinguished from morphology or anatomy.
GS physiology
. electrophysiology
. exercise physiology
. gravitational physiology
. neurophysiology
. psychophysiology
. respiratory physiology
. underwater physiology
RT aging (biology)
blood circulation
bone demineralization
catabolism
cytogenesis
differentiation (biology)
digesting
heart function
hemodynamics
homeostasis
menstruation
metabolism
mitosis
narcosis
physiochemistry
regeneration (physiology)
regularity
respiration
∞ science
shock (physiology)
stress (physiology)
thermoregulation
tolerances (physiology)

phytoplankton
DEF The aggregate of passively floating or drifting plant organisms in aquatic ecosystems.
GS plankton
. phytoplankton
plants (botany)
. aquatic plants

. . **phytoplankton**
RT **algae**
dissolved organic matter
marine biology
water pollution
zooplankton

phytotrons
DEF Apparatus for the growth of plants under a variety of controlled environmental conditions. Used for germinators and growth chambers.
UF *germinators*
growth chambers
RT **germination**
greenhouses
growth
plants (botany)

pi-electrons
GS **particles**
. **charged particles**
. . **energetic particles**
. . . **electrons**
. . . . **pi-electrons**
. **corpuscular radiation**
. . **energetic particles**
. . . **electrons**
. . . . **pi-electrons**
. **elementary particles**
. . **fermions**
. . . **leptons**
. . . . **electrons**
. . . . . **pi-electrons**
RT **molecular electronics**
nuclear particles

Piaggio aircraft
GS **Piaggio aircraft**
. **P-166 aircraft**
. **PD-808 aircraft**
RT ∞ **aircraft**

Piaggio P-166 aircraft
USE **P-166 aircraft**

Piaggio-Douglas PD-808 aircraft
USE **PD-808 aircraft**

Piasecki aircraft
GS **Piasecki aircraft**
. **VZ-8 aircraft**
RT ∞ **aircraft**

pickling (metallurgy)
DEF Preferential removal of oxide or mill scale from the surface of a metal by immersion usually in an acidic or alkaline solution.
GS **cleaning**
. **chemical cleaning**
. . **pickling (metallurgy)**
RT **descaling**
metal films
metal finishing
scale (corrosion)

pickoffs
USE **sensors**

pickups
USE **sensors**

picosecond pulses
GS **pulses**
. **picosecond pulses**
RT **amplitudes**
electromagnetic missiles
electromagnetic pulses
laser outputs
pulse rate

pulsed radiation
time signals

picrates
GS **nitrogen compounds**
. **nitro compounds**
. . **picrates**
. . . **ammonium picrates**

picture elements
USE **pixels**

picture tubes
UF *kinescopes*
GS **electron tubes**
. **vacuum tubes**
. . **cathode ray tubes**
. . . **picture tubes**
video equipment
. **picture tubes**
RT **display devices**
flying spot scanners
raster scanning
television equipment

PIDV (velocimetry)
USE **particle image velocimetry**

piedmonts
UF *paliments*
pediplains
GS **landforms**
. **terraces (landforms)**
. . **plateaus**
. . . **piedmonts**
. . . . **Central Piedmont (US)**
RT **coastal plains**
mountains

piercing
UF *puncturing*
RT **cutting**
drilling
extruding
forging
metal working
penetration
perforating
∞ **perforation**
spark machining
vulnerability

piers
USE **wharves**

piezoelectric ceramics
DEF Ceramic material with piezoelectric properties similar to those of some natural crystals.
GS **ceramics**
. **piezoelectric ceramics**
RT **lead zirconate titanates**

piezoelectric crystals
GS **crystals**
. **crystal oscillators**
. . **piezoelectric crystals**
oscillators
. **crystal oscillators**
. . **piezoelectric crystals**
RT **microsonics**
piezoresistive transducers
quartz transducers
single crystals

piezoelectric gages
GS **measuring instruments**
. **pressure gages**
. . **piezoelectric gages**
transducers
. **piezoelectric transducers**
. . **piezoelectric gages**
. **piezoresistive transducers**
. . **piezoelectric gages**
RT **pressure sensors**
strain gages

piezoelectric transducers
DEF Transducers that depend for their operation on the interaction between electric charge and the deformation of certain materials having piezoelectric properties. Note: Some crystals and specially processed ceramics have piezoelectric properties.
GS **transducers**
. **piezoelectric transducers**
. . **piezoelectric gages**
RT **interdigital transducers**
praetersonic devices
ultrasonic cleaning

piezoelectricity
DEF The property exhibited by some asymetrical crystalline materials which when subjected to strain in suitable directions develop polarization proportional to the strain.
GS **electrical properties**
. **piezoelectricity**
mechanical properties
. **piezoelectricity**
RT **crystal oscillators**
elastic properties
electricity
electrostriction
piezoresistive transducers
pyroelectricity

piezometers
GS **measuring instruments**
. **pressure gages**
. . **piezometers**
RT **seepage**

piezoresistive transducers
GS **transducers**
. **piezoresistive transducers**
. . **piezoelectric gages**
RT **piezoelectric crystals**
piezoelectricity

pigeons
GS **animals**
. **vertebrates**
. . **birds**
. . . **pigeons**

piggyback systems
RT **air launching**
multistage rocket vehicles
payload mass ratio
payloads
Saenger space transportation system
∞ **systems**

pigments
GS **pigments**
. **carotene**
. **chlorophylls**
. **cytochromes**
. **melanin**
. **visual pigments**
RT **additives**
albinism
anatase
chromophores
dope
fillers

inks
myoglobin
paints
phthalocyanin
rutile
skin (anatomy)

pigs (swine)
USE **swine**

Pike's Peak (CO)
GS landforms
. peaks (landforms)
. . **Pike's Peak (CO)**
RT Colorado
mountains

pile foundations
GS foundations
. **pile foundations**
RT ∞ piles

∞ **piles**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT nuclear reactors
pile foundations

pilocarpine
GS bases (chemical)
. alkaloids
. . **pilocarpine**
nitrogen compounds
. alkaloids
. . **pilocarpine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . alkaloids
. . . . **pilocarpine**

pilot error
UF *flight technical error*
GS errors
. **pilot error**
RT aircraft accidents
collisions
crash landing
crashes
human factors engineering
human performance
midair collisions
pilot induced oscillation

pilot induced oscillation
DEF Oscillations of a flying aircraft caused by transients and system changeovers, by pilot overreaction upon such transients, or by misleading pilot cues or excessive pilot gain in modern high-gain, high order aircraft control systems.
RT aerodynamic stability
aircraft control
aircraft stability
control stability
high gain
longitudinal control
man machine systems
nonstabilized oscillation
pilot error
pilot performance
self induced vibration
stable oscillations
transient oscillations

pilot landing aid television system
USE **PLAT system**

pilot performance
GS human performance
. **pilot performance**
. . blackout prevention
RT aircraft performance
astronaut performance
flight fatigue
intravehicular activity
man operated propulsion systems
operator performance
∞ performance
pilot induced oscillation
psychomotor performance
sensorimotor performance

pilot plants
RT industrial plants
models
product development
prototypes

pilot selection
GS selection
. personnel selection
. . **pilot selection**
RT physiological tests
psychological tests

pilot support systems
(added October 1997)
SN (LIMITED TO ADVANCED FLIGHT VEHICLE SYETEMS FOR INTEGRATING, INTERPRETING, AND PRESENTING FLIGHT OR MISSION RELATED INFORMATION)
UF *cockpit assistant systems*
Pilot's Associate
GS information systems
. **pilot support systems**
support systems
. **pilot support systems**
RT artificial intelligence
automatic pilots
avionics
cockpits
decision support systems
expert systems
flight management systems
human-computer interface
knowledge based systems
man machine systems

pilot training
GS education
. flight training
. . **pilot training**
RT astronaut training
aviation psychology
ejection injuries
ejection training
flight simulators
space flight training
training simulators

Pilot's Associate
(added October 1997)
USE **pilot support systems**

piloted centrifuges
USE **human centrifuges**

pilotless aircraft
SN (AIR VEHICLES USING REMOTE OR AUTONOMOUS CONTROL)
UF *unmanned aerial vehicles*
GS **pilotless aircraft**
. drone aircraft
. . target drone aircraft
. . . Firebee 2 target drone aircraft
. . . Jindivik target aircraft
RT ∞ aircraft
balloons
drone vehicles
light aircraft
∞ military aircraft
oblique wings
reconnaissance aircraft
remotely piloted vehicles

∞ **pilots**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aircraft pilots
automatic pilots
pilots (personnel)
test pilots

pilots (personnel)
GS personnel
. flying personnel
. . pilots (personnel)
. . . aircraft pilots
. . . . test pilots
. operators (personnel)
. . pilots (personnel)
. . . aircraft pilots
. . . . test pilots
RT astronauts
cosmonauts
crews
flight crews
∞ pilots

pinch effect
DEF The result of an electromechanical force that constricts, and sometimes momentarily ruptures, a molten conductor carrying current at a high density. The self contradiction of a plasma column carrying large currents due to the interaction of this current with its own magnetic field.
GS **pinch effect**
. plasma pinch
. . screw pinch
. . theta pinch
. . zeta pinch
. reverse field pinch
RT cylindrical plasmas
∞ effects
magnetic fields
magnetohydrodynamics
plasma compression
plasma control
relativistic plasmas
stellarators
thermonuclear power generation
thermonuclear reactions
zeta thermonuclear reactor

pineal gland
GS anatomy
. glands (anatomy)
. . endocrine glands
. . . **pineal gland**
. nervous system
. . central nervous system
. . . brain
. . . . diencephalon
. . . . . **pineal gland**

pinhole cameras
DEF Cameras which have no lenses, but consist essentially of a darkened box with a small hole in one side, so that an inverted image of

outside objects is projected on the opposite side where it is recorded on photographic film.
GS optical equipment
. cameras
. . pinhole cameras
photographic equipment
. cameras
. . pinhole cameras
RT apertures
photography
Pinhole Occulter Facility
pinholes

Pinhole Occulter Facility
GS observatories
. astronomical observatories
. . solar observatories
. . . **Pinhole Occulter Facility**
RT occultation
pinhole cameras
pinholes
spaceborne astronomy

pinholes
RT casting
castings
defects
interstices
leakage
pinhole cameras
Pinhole Occulter Facility
porosity

pinnacles
USE **peaks (landforms)**

pinning
SN (LIMITED TO ELECTRONICS)
DEF Sites within a superconducting material that are produced by localizing inclusions, dislocations, voids, etc., which provide a means of resisting flux motion (flux jumps) due to Lorenz forces. SN (limited to electronics).
GS **pinning**
. flux pinning
RT crystal defects
crystal dislocations
current density
magnetic flux
superconductors (materials)

pins
GS fasteners
. pins
RT couplings
holders
latches
rivets
∞ spikes
studs (structural members)

pintles
RT pivots
rudders
shafts (machine elements)

pion beams
GS beams (radiation)
. particle beams
. . pion beams
RT neutral beams
neutron beams

Pioneer 4 lunar probe
USE **Pioneer 4 space probe**

Pioneer project
GS programs
. NASA programs
. . NASA space programs
. . . **Pioneer project**
. projects
. . **Pioneer project**
. space programs
. . NASA space programs
. . . **Pioneer project**
RT lunar probes
Pioneer space probes
space probes

Pioneer Saturn spacecraft
USE **Pioneer 11 space probe**

Pioneer space probes
GS interplanetary spacecraft
. **Pioneer space probes**
. . Pioneer 1 space probe
. . Pioneer 2 space probe
. . Pioneer 3 space probe
. . Pioneer 4 space probe
. . Pioneer 5 space probe
. . Pioneer 6 space probe
. . Pioneer 7 space probe
. . Pioneer 8 space probe
. . Pioneer 9 space probe
. . Pioneer 10 space probe
. . Pioneer 11 space probe
. . Pioneer Venus 2 entry probes
. . . Pioneer Venus 2 night probe
. . . Pioneer Venus 2 sounder probe
unmanned spacecraft
. space probes
. . **Pioneer space probes**
. . . Pioneer 1 space probe
. . . Pioneer 2 space probe
. . . Pioneer 3 space probe
. . . Pioneer 4 space probe
. . . Pioneer 5 space probe
. . . Pioneer 6 space probe
. . . Pioneer 7 space probe
. . . Pioneer 8 space probe
. . . Pioneer 9 space probe
. . . Pioneer 10 space probe
. . . Pioneer 11 space probe
. . . Pioneer Venus 2 entry probes
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
RT Juno 2 launch vehicle
Pioneer project
Pioneer Venus 1 spacecraft
Pioneer Venus 2 spacecraft
Pioneer Venus spacecraft
solar probes

Pioneer Venus 1 spacecraft
DEF This orbiter spacecraft is the first of two launched on a seven month journey to observe the planet Venus, its atmosphere and clouds. It was launched May 20, 1978 and is still operational. Used for Pioneer Venus Orbiter.
UF *Pioneer Venus Orbiter*
GS interplanetary spacecraft
. Pioneer Venus spacecraft
. . **Pioneer Venus 1 spacecraft**
unmanned spacecraft
. Pioneer Venus spacecraft
. . **Pioneer Venus 1 spacecraft**
RT Pioneer space probes
∞ probes
space probes

Pioneer Venus 2 entry probes
DEF Collective term for the five Pioneer Venus atmospheric probes. They are Pioneer Venus 2 day probe, Pioneer Venus 2 night probe, Pioneer Venus 2 North probe, Pioneer Venus 2 sounder probe, and Pioneer Venus 2 transporter bus.
GS interplanetary spacecraft
. Pioneer space probes
. . **Pioneer Venus 2 entry probes**
. . . Pioneer Venus 2 night probe
. . . Pioneer Venus 2 sounder probe
. Pioneer Venus spacecraft
. . Pioneer Venus 2 spacecraft
. . . **Pioneer Venus 2 entry probes**
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
. Venus probes
. . Pioneer Venus 2 spacecraft
. . . **Pioneer Venus 2 entry probes**
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
unmanned spacecraft
. Pioneer Venus spacecraft
. . Pioneer Venus 2 spacecraft
. . . **Pioneer Venus 2 entry probes**
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
. space probes
. . Pioneer space probes
. . . **Pioneer Venus 2 entry probes**
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
. . Venus probes
. . . Pioneer Venus 2 spacecraft
. . . . **Pioneer Venus 2 entry probes**
. . . . . Pioneer Venus 2 night probe
. . . . . Pioneer Venus 2 sounder probe
RT ∞ probes

Pioneer Venus 2 Multiprobe spacecraft
USE **Pioneer Venus 2 spacecraft**

Pioneer Venus 2 night probe
GS interplanetary spacecraft
. Pioneer space probes
. . Pioneer Venus 2 entry probes
. . . **Pioneer Venus 2 night probe**
. Pioneer Venus spacecraft
. . Pioneer Venus 2 spacecraft
. . . Pioneer Venus 2 entry probes
. . . . **Pioneer Venus 2 night probe**
. Venus probes
. . Pioneer Venus 2 spacecraft
. . . Pioneer Venus 2 entry probes
. . . . **Pioneer Venus 2 night probe**
unmanned spacecraft
. Pioneer Venus spacecraft
. . Pioneer Venus 2 spacecraft
. . . Pioneer Venus 2 entry probes
. . . . **Pioneer Venus 2 night probe**
. space probes
. . Pioneer space probes
. . . Pioneer Venus 2 entry probes
. . . . **Pioneer Venus 2 night probe**
. . Venus probes
. . . Pioneer Venus 2 spacecraft
. . . . Pioneer Venus 2 entry probes
. . . . . **Pioneer Venus 2 night probe**
RT ∞ probes

Pioneer Venus 2 sounder probe
GS interplanetary spacecraft
. Pioneer space probes
. . Pioneer Venus 2 entry probes
. . . **Pioneer Venus 2 sounder probe**
. Pioneer Venus spacecraft
. . Pioneer Venus 2 spacecraft
. . . Pioneer Venus 2 entry probes
. . . . **Pioneer Venus 2 sounder probe**
. Venus probes

. . Pioneer Venus 2 spacecraft
. . . Pioneer Venus 2 entry probes
. . . . **Pioneer Venus 2 sounder probe**
unmanned spacecraft
. Pioneer Venus spacecraft
. . Pioneer Venus 2 spacecraft
. . . Pioneer Venus 2 entry probes
. . . . **Pioneer Venus 2 sounder probe**
. space probes
. . Pioneer space probes
. . . Pioneer Venus 2 entry probes
. . . . **Pioneer Venus 2 sounder probe**
. . Venus probes
. . . Pioneer Venus 2 spacecraft
. . . . Pioneer Venus 2 entry probes
. . . . . **Pioneer Venus 2 sounder probe**

Pioneer Venus 2 spacecraft
DEF This multiprobe spacecraft, launched on its Venus mission in August 1978, comprises a Transporter Bus, a sounder probe, and three identical probes (North, night, and day) which separately investigated and photographed the atmosphere, clouds and related phenomena. The multiprobe spacecraft traveled about 354 million kilometers. It entered Venus atmosphere on December 9, 1978 and all probes transmitted data. Used for Pioneer Venus 2 Multiprobe spacecraft.
UF *Pioneer Venus 2 Multiprobe spacecraft*
GS interplanetary spacecraft
. Pioneer Venus spacecraft
. . **Pioneer Venus 2 spacecraft**
. . . Pioneer Venus 2 entry probes
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
. . . Pioneer Venus 2 transporter bus
. Venus probes
. . **Pioneer Venus 2 spacecraft**
. . . Pioneer Venus 2 entry probes
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
. . . Pioneer Venus 2 transporter bus
unmanned spacecraft
. Pioneer Venus spacecraft
. . **Pioneer Venus 2 spacecraft**
. . . Pioneer Venus 2 entry probes
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
. . . Pioneer Venus 2 transporter bus
. space probes
. . Venus probes
. . . **Pioneer Venus 2 spacecraft**
. . . . Pioneer Venus 2 entry probes
. . . . . Pioneer Venus 2 night probe
. . . . . Pioneer Venus 2 sounder probe
. . . . Pioneer Venus 2 transporter bus
RT Pioneer space probes
∞ probes
∞ spacecraft

Pioneer Venus 2 transporter bus
GS interplanetary spacecraft
. Pioneer Venus spacecraft
. . Pioneer Venus 2 spacecraft
. . . **Pioneer Venus 2 transporter bus**
. Venus probes
. . Pioneer Venus 2 spacecraft
. . . **Pioneer Venus 2 transporter bus**
unmanned spacecraft
. Pioneer Venus spacecraft
. . Pioneer Venus 2 spacecraft
. . . **Pioneer Venus 2 transporter bus**
. space probes
. . Venus probes
. . . Pioneer Venus 2 spacecraft
. . . . **Pioneer Venus 2 transporter bus**
RT ∞ probes

Pioneer Venus Orbiter
USE **Pioneer Venus 1 spacecraft**

Pioneer Venus spacecraft
UF *Pioneer 12 space probe*
GS interplanetary spacecraft
. **Pioneer Venus spacecraft**
. . Pioneer Venus 1 spacecraft
. . Pioneer Venus 2 spacecraft
. . . Pioneer Venus 2 entry probes
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
. . . Pioneer Venus 2 transporter bus
unmanned spacecraft
. **Pioneer Venus spacecraft**
. . Pioneer Venus 1 spacecraft
. . Pioneer Venus 2 spacecraft
. . . Pioneer Venus 2 entry probes
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
. . . Pioneer Venus 2 transporter bus
RT Pioneer space probes
∞ probes
space probes

Pioneer 1 space probe
GS interplanetary spacecraft
. Pioneer space probes
. . **Pioneer 1 space probe**
unmanned spacecraft
. space probes
. . Pioneer space probes
. . . **Pioneer 1 space probe**
RT Thor Able rocket vehicle

Pioneer 2 space probe
GS interplanetary spacecraft
. Pioneer space probes
. . **Pioneer 2 space probe**
unmanned spacecraft
. space probes
. . Pioneer space probes
. . . **Pioneer 2 space probe**

Pioneer 3 space probe
GS interplanetary spacecraft
. Pioneer space probes
. . **Pioneer 3 space probe**
unmanned spacecraft
. space probes
. . Pioneer space probes
. . . **Pioneer 3 space probe**
RT Juno 2 launch vehicle

Pioneer 4 space probe
UF *Pioneer 4 lunar probe*
GS interplanetary spacecraft
. Pioneer space probes
. . **Pioneer 4 space probe**
unmanned spacecraft
. space probes
. . Pioneer space probes
. . . **Pioneer 4 space probe**
RT Juno 2 launch vehicle

Pioneer 5 space probe
GS interplanetary spacecraft
. Pioneer space probes
. . **Pioneer 5 space probe**
unmanned spacecraft
. space probes
. . Pioneer space probes
. . . **Pioneer 5 space probe**
RT Thor Able rocket vehicle

Pioneer 6 space probe
GS interplanetary spacecraft
. Pioneer space probes
. . **Pioneer 6 space probe**
unmanned spacecraft
. space probes
. . Pioneer space probes
. . . **Pioneer 6 space probe**
RT Delta launch vehicle
Juno 2 launch vehicle

Pioneer 7 space probe
GS interplanetary spacecraft
. Pioneer space probes
. . **Pioneer 7 space probe**
unmanned spacecraft
. space probes
. . Pioneer space probes
. . . **Pioneer 7 space probe**
RT Delta launch vehicle
Juno 2 launch vehicle

Pioneer 8 space probe
GS interplanetary spacecraft
. Pioneer space probes
. . **Pioneer 8 space probe**
unmanned spacecraft
. space probes
. . Pioneer space probes
. . . **Pioneer 8 space probe**
RT Juno 2 launch vehicle
∞ probes

Pioneer 9 space probe
GS interplanetary spacecraft
. Pioneer space probes
. . **Pioneer 9 space probe**
unmanned spacecraft
. space probes
. . Pioneer space probes
. . . **Pioneer 9 space probe**
RT ∞ probes

Pioneer F space probe
USE **Pioneer 10 space probe**

Pioneer G space probe
USE **Pioneer 11 space probe**

Pioneer 10 space probe
UF *Pioneer F space probe*
GS interplanetary spacecraft
. Pioneer space probes
. . **Pioneer 10 space probe**
unmanned spacecraft
. space probes
. . Pioneer space probes
. . . **Pioneer 10 space probe**
RT ∞ probes

Pioneer 11 space probe
UF *Pioneer G space probe*
Pioneer Saturn spacecraft
GS interplanetary spacecraft
. Pioneer space probes
. . **Pioneer 11 space probe**
unmanned spacecraft
. space probes
. . Pioneer space probes
. . . **Pioneer 11 space probe**
RT ∞ probes

Pioneer 12 space probe
USE **Pioneer Venus spacecraft**

pions
GS particles
. elementary particles
. . bosons
. . . mesons
. . . . pions
. . hadrons
. . . mesons
. . . . pions
. nuclear particles
. . bosons
. . . mesons
. . . . pions
RT baryons
charged particles
kaons

pipe flow
UF *Kirchhoff–Helmholtz flow*
GS fluid flow
. gas flow
. . pipe flow
. internal flow
. . pipe flow
. parallel flow
. . pipe flow
RT cavity flow
channel flow
choked flow
critical flow
laminar flow
liquid flow
mass flow
multiphase flow
open channel flow
orifice flow
pipes (tubes)
pressure gradients
single–phase flow
steady flow
steam flow
subcritical flow
supercritical flow
turbulent flow
uniform flow
unsteady flow
water flow
water hammer
water pressure

pipe nozzles
RT exhaust systems
inlet nozzles
intake systems
nozzle geometry
∞ nozzles
openings
outlets
tanks (containers)

pipelines
GS pipelines
. sewers
RT crossings
∞ lines
materials handling
pipes (tubes)
pumps
siphons
steam flow
∞ storage
storage tanks
transportation
waste disposal
water hammer

pipelining (computers)
DEF Processing techniques for improving the capability of computer systems by modelling, sequencing control, resource allocation, etc.
GS data processing
. pipelining (computers)
RT associative processing (computers)
data processing equipment
multiprocessing (computers)
multiprogramming
parallel programming
RISC processors
time sharing
vector processing (computers)

Piper aircraft
GS light aircraft
. Piper aircraft
. . PA–34 Seneca aircraft
RT ∞ aircraft
general aviation aircraft

piperidine
GS bases (chemical)
. piperidine
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . piperidine
RT pyridines

pipes (tubes)
UF *tubing*
GS pipes (tubes)
. gas pipes
. U bends
RT ∞ casing
circular tubes
ducts
fluid flow
∞ headers
hoses
∞ hydraulics
internal flow
manifolds
pipe flow
pipelines
risers
siphons
syringes
∞ tubes

pipettes
RT burettes
glassware
laboratory equipment

Pirani gages
GS measuring instruments
. pressure gages
. . vacuum gages
. . . Pirani gages
vacuum apparatus
. vacuum gages
. . Pirani gages
RT hot–wire flowmeters
ionization gages
Knudsen gages
Mcleod gages
pressure measurement

piston engines
DEF Engines, especially internal combustion engines, in which a piston or pistons moving back and forth work upon a crankshaft or other device to create rotational movement. Used for reciprocating engines.
UF *reciprocating engines*
GS engines
. piston engines
. . diesel engines
. . free–piston engines
. . Stirling engines
RT aircraft engines
automobile engines
external combustion engines
fuel injection
internal combustion engines
pistons
reciprocation
rotary engines
Wankel engines

piston theory
RT compressing
fluid dynamics
pistons
∞ theories

pistons
GS pistons
. magnetic pistons
RT combustion chambers
engine parts
free–piston engines
internal combustion engines
piston engines
piston theory
plungers
reciprocation

∞ **pitch**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *tone*
RT frequencies
pitch (inclination)
pitch (material)

pitch (inclination)
DEF Of a vehicle, an angular displacement about an axis parallel to the lateral axis of the vehicle. Used for damping in pitch, phugoid oscillations, and pitch angles.
UF *damping in pitch*
phugoid oscillations
pitch angles
GS attitude (inclination)
. pitch (inclination)
RT angles (geometry)
heaving
longitudinal control
longitudinal stability
∞ motion
∞ pitch
roll
rotation
slopes
stability augmentation
variable pitch propellers
yaw

pitch (material)
DEF The residues from the destructive distillation of tars.
RT asphalt
oils
∞ pitch
tars

pitch angles
USE pitch (inclination)

pitch attitude control
USE longitudinal control

pitching moments
GS moments
. stability derivatives
. . pitching moments
RT aerodynamic coefficients
longitudinal stability
moments of inertia
rolling moments
torque
yawing moments

pitot tubes
DEF Open ended tubes or tube arrangements which, when pointed upstream, may be used to measure the stagnation pressure of the fluid for subsonic flow; or the stagnation pressure behind the tube's normal shock wave for supersonic flow. (Pronounced pee–toe. After Henri Pitot, 1695–1771, French scientist.) Used for Preston tubes.
UF *Preston tubes*
RT flow measurement
flowmeters
pressure measurement
protuberances
speed indicators
static pressure
∞ tubes
velocity measurement
Venturi tubes

∞ **pits**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT pits (excavations)
pitting

pits (excavations)
RT boreholes
excavation
mines (excavations)
∞ pits
sumps

pitting
RT chemical attack
chipping
corrosion
corrosion resistance
corrosion tests
degradation
erosion
erosive burning
etching
hot corrosion
metal–water reactions
∞ pits
scoring

pituitary gland
UF *hypophysis*
GS anatomy
. glands (anatomy)
. . endocrine glands
. . . pituitary gland
RT brain
hypothalamus

pituitary hormones
GS secretions
. endocrine secretions
. . hormones
. . . pituitary hormones
. . . . adrenocorticotropin (ACTH)

PIV (velocimetry)
USE particle image velocimetry

pivoted wing aircraft
USE tilt wing aircraft

pivots
DEF The paths followed by a point in a diameter of a circle as the circle rolls along in a straight line. Used for trochoids.
UF *trochoids*
RT bearings
gimbals
hinges
pintles
shafts (machine elements)
supports
swivels

PIX
USE plasma interaction experiment

pixels
DEF Shortened term for 'picture elements.' They are image resolution elements in vidicon–type detectors. Used for picture elements.
UF *picture elements*
RT aerial photography
electrophotometry
imaging techniques
photographs
photography
remote sensing
satellite imagery
vidicons

PL/1
GS languages
. programming languages
. . PL/1
RT Cobol
compilers
computer programming
FORTRAN
machine oriented languages

plages (faculae)
USE faculae

plains
DEF Any flat areas, large or small, at a low elevation; specifically, extensive regions of comparatively smooth and level or gently undulating land, having few or no prominent surface irregularities. Plains sometime have a considerable slope, and usually at a low elevation with reference to surrounding areas. Plains may be either forested or bare of trees, and may be formed by deposition or by erosion.
GS land
. plains
. . coastal plains
. . flood plains
. . Llanos Orientales (Colombia)
. . pampas
. . playas
. . tundra
landforms
. plains
. . coastal plains
. . flood plains
. . Llanos Orientales (Colombia)
. . pampas
. . playas
. . tundra
RT farmlands
flats (landforms)
geography
grasslands
Great Plains Corridor (North America)
plateaus
steppes
topography
wilderness

plan position indicators
DEF Display devices on which target blips are shown in plan position, thus forming a map–like display, with radial distance from the center representing range and with the angle of the radius vector representing azimuth angle. Used for PPI (position indicators).
UF *PPI (position indicators)*
GS display devices
. position indicators
. . plan position indicators
. radarscopes
. . plan position indicators
measuring instruments
. indicating instruments
. . position indicators
. . . plan position indicators
radar equipment
. radarscopes
. . plan position indicators

planar structures
RT flat layers
flat plates
flat surfaces
flatness
∞ structures
surface properties

Planck's constant
GS constants
. Planck's constant
RT black body radiation
de Broglie wavelengths
electromagnetic radiation
nuclear magnetic resonance
photons
quantum theory
thermal radiation
Wentzel–Kramer–Brillouin method

plane strain
DEF A deformation of a body in which the displacement of all points in the body are parallel to a given plane, and the displacement values are not dependent on the distance perpendicular to the plane.
RT crack propagation
elastic deformation
fracture mechanics
plane stress
plastic deformation
stress intensity factors
stress–strain relationships

plane stress
GS stresses
. plane stress
RT loads (forces)
plane strain
stress concentration

plane waves
GS longitudinal waves
. plane waves
RT beams (radiation)
cylindrical waves
elastic waves
normal shock waves
∞ radiation
shock waves

solitary waves
sound waves
spatial filtering
spherical waves
transverse waves
traveling waves
∞ waves

planet ephemerides
GS ephemerides
. planet ephemerides
RT geocentric coordinates
planets

planet origins
USE planetary evolution

planetariums
RT astronomical models
display devices

planetary atmospheres
SN (EXCLUDES EARTH ATMOSPHERE)
GS environments
. extraterrestrial environments
. . planetary environments
. . . planetary atmospheres
. . . . helium hydrogen atmospheres
. . . . Jupiter atmosphere
. . . . Mars atmosphere
. . . . Mercury atmosphere
. . . . Neptune atmosphere
. . . . planetary ionospheres
. . . . Pluto atmosphere
. . . . Saturn atmosphere
. . . . Uranus atmosphere
. . . . Venus atmosphere
. . . . . Venus clouds
RT ∞ absorption
∞ atmospheres
atmospheric attenuation
atmospheric composition
atmospheric density
atmospheric temperature
Earth atmosphere
ionopause
lunar atmosphere
nongray atmospheres
organic solids
planetary meteorology
planetary rings
primitive Earth atmosphere
radiative transfer
radio occultation
satellite atmospheres
Saturn rings
solar planetary interactions
terraforming

planetary bases
RT extraterrestrial resources
space exploration
stations

planetary boundary layer
DEF The layer of the atmosphere from the Earth's surface to the geostrophic wind level, including the surface boundary layer and the Ekman layer.
GS boundary layers
. planetary boundary layer
RT atmospheric boundary layer
core–mantle boundary

planetary composition
GS composition (property)
. planetary composition
RT Earth planetary structure
gas giant planets
Jupiter rings
Saturn rings
space exploration
structural properties (geology)

planetary cores
DEF The centers of planets.
GS cores
. planetary cores
. . Earth core
RT core–mantle boundary
lunar core
planets
stellar cores

planetary craters
DEF Collective term for craters on any of the planetary surfaces.
GS craters
. planetary craters
. . Mars craters
RT Earth (planet)
impact damage
Mars (planet)
Mars surface
Mercury (planet)
Mercury surface
meteorite craters
planetary geology
planets
Venus (planet)
Venus surface

planetary crusts
DEF The outermost layers of planets. The planetary crusts are on top of the mantle and are modified by various processes of weathering, sedimentation, metamorphosis, volcanism, and bombardment by meteorites.
GS crusts
. planetary crusts
. . Earth crust
RT lunar crust
planetary geology
planetary mantles

planetary cryospheres
(added June 1998)
RT ∞ cryospheres
ice environments
Mars (planet)
permafrost
planetary meteorology
polar caps

planetary entry
USE atmospheric entry

planetary environments
SN (EXCLUDES EARTH)
GS environments
. extraterrestrial environments
. . planetary environments
. . . Mars environment
. . . . Mars atmosphere
. . . planetary atmospheres
. . . . helium hydrogen atmospheres
. . . . Jupiter atmosphere
. . . . Mars atmosphere
. . . . Mercury atmosphere
. . . . Neptune atmosphere
. . . . planetary ionospheres
. . . . Pluto atmosphere
. . . . Saturn atmosphere
. . . . Uranus atmosphere
. . . . Venus atmosphere
. . . . . Venus clouds
. . . planetary magnetospheres
. . . . planetary magnetotails
RT aerospace environments
bioastronautics
∞ cryospheres
exobiology
life support systems
long duration space flight
lunar environment
planets
protoplanets
terraforming
terrestrial planets
thermal environments

planetary evolution
UF *planet origins*
GS evolution (development)
. planetary evolution
RT cosmology
planetary geology
protoplanets
solar system evolution
stellar evolution

planetary exploration
USE space exploration

planetary explorer
USE outer planets explorers

planetary geology
DEF Study or science of a planet, its history, and its life as recorded in the rocks. Includes the study of the surface features, the geometry of rock formations, weathering and erosion, and sedimentation.
GS geology
. planetary geology
. . Mars volcanoes
RT lunar geology
Mars Pathfinder
planetary craters
planetary crusts
planetary evolution
planetary structure
planetary surfaces
planetology
planets
remote sensing
solar system
space exploration

planetary gravitation
GS gravitation
. planetary gravitation
RT escape velocity
lunar gravitation

planetary ionospheres
SN (EXCLUDES EARTH IONOSPHERE)
GS environments
. extraterrestrial environments
. . planetary environments
. . . planetary atmospheres
. . . . planetary ionospheres
RT ∞ atmospheres
∞ ionospheres
Jupiter atmosphere
magnetosphere–ionosphere coupling
Mars atmosphere
Neptune atmosphere
Saturn atmosphere
Uranus atmosphere
Venus atmosphere

planetary landing
SN (EXCLUDES LANDING ON THE PLANET EARTH)
GS landing
. spacecraft landing
. . planetary landing
. . . Mars landing
RT crash landing
glide landings
hard landing
horizontal spacecraft landing
interplanetary flight
lunar landing
orbital mechanics
roving vehicles
soft landing
water landing

planetary limb
DEF In astronomy, the circular outer edge of a planet.
GS planetary limb
. Earth limb
RT ∞ limbs
lunar limb
solar limb

planetary magnetic fields
GS magnetic fields
. planetary magnetic fields
RT geomagnetic tail
geomagnetism
planetary magnetospheres
planetary magnetotails
polar cusps
solar planetary interactions

planetary magnetospheres
SN (EXCLUDES EARTH MAGNETOSPHERE)
GS environments
. extraterrestrial environments
. . planetary environments
. . . planetary magnetospheres
. . . . planetary magnetotails
RT Earth magnetosphere
∞ magnetospheres
planetary magnetic fields
solar planetary interactions

planetary magnetotails
(added March 1990)
SN (EXCLUDES EARTH'S MAGNETOTAIL; FOR EARTH USE 'GEOMAGNETIC TAIL')
DEF The portion of the magnetosphere extending from a planet in the direction away from the sun for a variable distance of the order of 1,000 planet radii.
GS environments
. extraterrestrial environments
. . planetary environments
. . . planetary magnetospheres
. . . . planetary magnetotails
RT exosphere
geomagnetic tail
magnetopause
∞ magnetotails
planetary magnetic fields
solar planetary interactions
solar wind

planetary mantles
GS planetary mantles
. Earth mantle
RT core–mantle boundary
crusts
lithosphere
lunar mantle
planetary crusts

planetary mapping
GS mapping
. planetary mapping
RT astrography
ground penetrating radar
Heat Capacity Mapping Mission
thermal mapping

planetary mass
GS mass
. planetary mass
RT protoplanets

planetary meteorology
GS meteorology
. planetary meteorology
RT atmospheric circulation
atmospheric physics
Jupiter atmosphere
Mars atmosphere
Mercury atmosphere
planetary atmospheres
planetary cryospheres
planetology
planets
Venus atmosphere

planetary motion
USE solar orbits

planetary nebulae
GS celestial bodies
. nebulae
. . planetary nebulae
RT Orion nebula

planetary orbits
GS orbits
. planetary orbits
RT Amor asteroid
Apollo asteroids
Charon
circular orbits
Earth orbits
elliptical orbits
equatorial orbits
interplanetary trajectories
orbital resonances (celestial mechanics)
parking orbits
polar orbits
retrograde orbits
satellite orbits
spacecraft orbits
swingby technique
transfer orbits
twenty-four hour orbits
Viking orbiter spacecraft

planetary quakes
RT earthquakes
geodynamics
moonquakes
seismic waves
shock waves

planetary quarantine
RT spacecraft sterilization

planetary radiation
SN (EXCLUDES TERRESTRIAL RADIATION)
GS electromagnetic radiation
. planetary radiation
extraterrestrial radiation
. planetary radiation
RT albedo
decimeter waves
infrared radiation
light (visible radiation)
∞ radiation
radio waves
Saturn atmosphere
terrestrial radiation
thermal radiation
VLF emission recorders

planetary rings
GS celestial bodies
. planetary rings
. . Jupiter rings
. . Saturn rings
. . Uranus rings
RT moonlets
planetary atmospheres
planets
∞ rings

planetary rotation
GS gyration
. rotation
. . planetary rotation
RT astrophysics
planetology
rotating bodies
stellar rotation

planetary satellites
USE natural satellites

planetary space flight
USE interplanetary flight

planetary spacecraft
USE interplanetary spacecraft

planetary structure
RT asthenosphere
chemical composition
Earth planetary structure
Jupiter rings
lunar mantle
planetary geology
planetology
Uranus rings

planetary surfaces
GS planetary surfaces
. Mars surface
. Mercury surface
. Venus surface
RT Earth surface
Jupiter red spot
Marsokhod Mars roving vehicles
planetary geology
roving vehicles
Saturn rings
surface properties
∞ surfaces
topography

planetary systems
DEF Systems consisting of a star and the planets and other objects in orbit around it.
GS planetary systems
. solar system
RT extrasolar planets
orbital resonances (celestial mechanics)
solar system evolution
∞ systems

planetary temperature
GS temperature
. planetary temperature
RT atmospheric temperature
Saturn rings

planetary waves
DEF Waves on uniform currents in two-dimensional nondivergent fluid systems rotating with varying angular speeds about the local vertical (beta plane). These waves represent a special case of barotropic disturbance, conserving absolute vorticity. As applied to atmospheric flow, the planetary waves takes into account the variability of the Coriolis parameter while assuming the motion to be two-dimensional. Used for long waves (meteorology) and Rossby waves.
UF *long waves (meteorology)*
Rossby waves
GS barotropism
. planetary waves
internal waves
. planetary waves
tropospheric waves
. planetary waves
RT atmospheric circulation
barotropic flow
Coriolis effect
fluid flow
gravity waves
Kelvin waves
Rossby regimes
rotating fluids
rotating liquids
vortices
∞ waves
zonal flow (meteorology)

planetesimals
USE protoplanets

planetocentric coordinates
GS coordinates
. planetocentric coordinates
. . geocentric coordinates
RT astronomical coordinates
celestial reference systems
spherical coordinates

planetology
RT Jupiter rings
planetary geology
planetary meteorology
planetary rotation
planetary structure
Saturn rings
terrestrial planets

planets
DEF Celestial bodies of the solar system, revolving around the sun in nearly circular orbits, or similar bodies revolving around stars. The larger of such bodies are sometimes called principal planets to distinguish them from asteroids, planetoids, or minor planets, which are comparatively small. The larger planets are accompanied by satellites such as the moon. Inferior planets have orbits smaller than that of the Earth; superior planets have orbits larger than that of the Earth. The four planets nearest the sun are called inner planets; the others, outer planets. The four largest planets are called major planets. The four planets commonly used for celestial observations are called navigational planets. The word planet is of Greek origin, meaning, literally, wanderer, applied because the planets appear to move relative to the stars.
GS celestial bodies
. planets
. . extrasolar planets
. . gas giant planets
. . . Jupiter (planet)
. . . Neptune (planet)
. . . Saturn (planet)
. . . Uranus (planet)
. . Pluto (planet)
. . terrestrial planets
. . . Earth (planet)
. . . Mars (planet)
. . . Mercury (planet)
. . . Venus (planet)
RT celestial mechanics
Chiron
ecliptic
Jupiter red spot
natural satellites
planet ephemerides
planetary cores
planetary craters
planetary environments
planetary geology
planetary meteorology
planetary rings
protoplanets
Saturn rings
solar system
solar system evolution
sun

planforms
GS planforms
. caret wings
. rectangular planforms
. . rectangular panels
. . rectangular plates
. . rectangular wings
. sweptback tail surfaces
. trapezoidal tail surfaces
. wing planforms
. . channel wings
. . infinite span wings
. . swept forward wings
. . . trapezoidal wings
. . sweptback wings
. . . arrow wings
. . . delta wings
. . . trapezoidal wings
. . variable sweep wings
RT ∞ bodies
∞ cross sections
geometry
∞ profiles
shapes
∞ surface geometry

planigraphy
USE tomography

planing
SN (EXCLUDES MOTION INVOLVING DYNAMIC SUPPORTING FORCES)
GS cutting
. planing
RT grinding (material removal)
machining
metal cutting
milling (machining)
slicing
smoothing

planispheres
GS maps
. astronomical maps
. . planispheres
RT astronomical coordinates
celestial sphere
constellations
polar coordinates

plankton
DEF The aggregate of passively floating or drifting plant and animal organisms which provide the major source of sustenance for animal life in the aquatic ecosystem. Used for plankton bloom.
UF *plankton bloom*
GS plankton
. phytoplankton
. zooplankton
RT algae
animals
plants (botany)
red tide
thermal pollution

plankton bloom
USE plankton

planning
GS planning
. airport planning
. management planning
. . production planning
. . project planning
. mission planning
. regional planning
. . urban planning
. task planning (robotics)
. trajectory planning
RT budgeting
critical path method
Delphi method (forecasting)
∞ design
forecasting
∞ missions
optimization
pattern method (forecasting)
probe method (forecasting)
production engineering
profile method (forecasting)
progress
sequencing
slicing
Starsite program
training analysis
urban development

planotrons
UF *amplitrons (trademark)*
GS amplifiers
. microwave amplifiers
. . planotrons
electron tubes
. vacuum tubes
. . microwave tubes
. . . planotrons
microwave equipment
. microwave amplifiers
. . planotrons
. microwave tubes
. . planotrons
RT camera tubes
electric arcs
magnetrons

∞ **plans**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT drawings
flight plans
layouts
mission planning
payload integration plan
urban development

plant design
SN (EXCLUDES BIOLOGICAL PLANTS)
DEF Encompasses all design consideration of physical plants, i.e., airports, industrial plants, test facilities, etc. Structural is just one aspect of this design. SN (excludes biological plants)
RT architecture
∞ design
structural design

plant diseases
UF *diseased vegetation*
GS plant diseases
. blight
RT agriculture
crop growth
crop identification
crop vigor
diseases
fungi
plant stress
plants (botany)
rust fungi

plant roots
RT bulbs
plants (botany)
∞ roots
vegetation growth

plant stress
DEF Stimulus or a series of stimuli of such magnitude as to disrupt the growth and/or survival of plants.
GS stress (biology)
. plant stress
RT aerial photography
agriculture
crop growth
crop vigor
Earth Resources Program
plant diseases
remote sensing
soil moisture
spectral reflectance
vegetation growth

plantar tissues
GS tissues (biology)
. plantar tissues

planting
RT agriculture
∞ crops
cultivation
farm crops
farmlands
fertilizers
plants (botany)
plowing
plows
seeds
silviculture
soils
tractors
vegetables

plants (botany)
UF *flora*
GS plants (botany)
. alfalfa
. algae
. . blue green algae
. . . anabaena
. . . Microcystis
. . . Nostoc
. . Chlorella
. . Dunaliella
. . porphyra
. . scenedesmus
. aquatic plants
. . phytoplankton
. barley
. brush (botany)
. . chaparral
. Bryophytes
. corn
. cotton
. fungi
. . Aspergillus
. . Coccomyces
. . gibberellins
. . neurospora
. . rhizopus
. . rust fungi
. . saccharomyces
. . yeast
. grasses
. . hay
. . reeds (plants)
. . sea grasses
. . sorghum
. guayule
. leguminous plants
. . soybeans
. lichens
. millet
. oats
. photophilic plants
. phreatophytes
. potatoes
. rice
. saprophytes
. spinach
. sugar beets
. sugar cane
. sunflowers
. thermophilic plants
. . blue green algae
. . . anabaena
. . . Microcystis
. . . Nostoc
. tobacco
. tradescantia
. tragacanth
. trees (plants)
. . citrus trees
. . conifers
. . deciduous trees
RT agriculture
angiosperms
animals
biochemical oxygen demand
biogeochemistry
biomass
blight
botany
canopies (vegetation)
carbon cycle
chlorophylls
cortexes (botany)
crop growth
crop vigor
defoliants
defoliation
Earth resources
environments
farm crops
foliage
food chain
forests
frost damage
geobotany
geotropism
gravitropism
greenhouses
halophiles
herbicides
heterotrophs
hydroponics
infestation
lacunas
leaves
microorganisms
microspores
mitra
orchards
organisms
petals
phototropism
phytotrons
plankton
plant diseases
plant roots
planting
plowing
pollen
rain forests
seeds
spores
stems
utricle
vegetation
viability
vineyards
wood

plants (industries)
USE industrial plants

plasma acceleration
UF *magnetohydrodynamic acceleration*
GS rates (per time)
. acceleration (physics)
. . plasma acceleration
RT ∞ acceleration
particle acceleration
plasmas (physics)
wave propagation
wave–particle interactions

plasma accelerators
GS plasma accelerators
. alpha plasma devices
. coaxial plasma accelerators
. Cyclops plasma accelerator
RT ∞ accelerators
electromagnetic acceleration
ion injection
magnetic annular arc
magnetohydrodynamic generators
plasmas (physics)

plasma antennas
DEF An air plasma made by ionizing the atmosphere which acts as the conducting element of an RF antenna.
GS antennas
. plasma antennas
RT antenna design
antenna radiation patterns
plasma cylinders
satellite communication
spacecraft communication

plasma arc cutting
DEF Use of plasma torches for cutting hard materials at extremely high temperatures.
RT metal cutting
metal working
plasma arc welding
plasma torches

plasmas (physics)

plasma arc spraying
USE arc spraying

plasma arc welding
GS welding
. fusion welding
. . electric welding
. . . arc welding
. . . . plasma arc welding
RT plasma arc cutting
plasma torches
plasmas (physics)

plasma arcs
USE plasma jets

plasma bubbles
DEF Pockets of very low electron density in the equatorial F region of the ionosphere in which the plasma density is lower than the ambient density.
RT F region
plasma density

plasma chemistry
RT ∞ chemistry
nuclear chemistry
plasmas (physics)

plasma chromatography
USE ion mobility spectroscopy

plasma clouds
DEF Specifically, a mass of ionized gas flowing out of the sun.
GS particles
. charged particles
. . plasma clouds
. . . magnetic clouds
RT chemical clouds
∞ clouds
cosmic plasma
Earth magnetosphere
geomagnetic hollow
hydrogen clouds
interplanetary medium
ion sheaths
plasmapause
plasmas (physics)

plasma composition
GS composition (property)
. plasma composition
RT atom concentration
gas composition
ion motion
ionospheric composition
nonequilibrium plasmas
nonuniform plasmas
plasmas (physics)
Thomas–Fermi model
uranium plasmas

plasma compression
DEF Decrease in volume and consequent increase in density of a plasma usually by the application of an intense magnetic field.
GS compressing
. plasma compression
RT controlled fusion
dense plasmas
inertial fusion (reactor)
magnetic effects
magnetic field configurations
pinch effect
plasma focus
plasma pressure
plasmas (physics)
strongly coupled plasmas
theta pinch
tokamak devices
zeta pinch

plasma conductivity
GS electrical properties
. electrical resistivity
. . plasma conductivity
transport properties
. electrical resistivity
. . plasma conductivity
RT collisional plasmas
∞ conductivity
ionospheric conductivity
magnetohydrodynamic stability
plasmas (physics)
strongly coupled plasmas

plasma confinement
USE plasma control

plasma control
UF *plasma confinement*
RT ballooning modes
beta factor
bumpy toruses
confinement
∞ control
crossed field guns
crossed fields
divertors (fusion reactors)
electron–ion recombination
elliptical plasmas
helical inducers
helical windings
heliotrons
limiters (fusion reactors)
magnetic annular arc
magnetic compression
magnetic field configurations
magnetic mirrors
magnetically trapped particles
mirror fusion
pinch effect
plasmas (physics)
reverse field pinch
rigid rotors (plasma physics)
screw pinch
spheromaks
stellarators
tandem mirrors
thermal barriers (plasma control)
tokamak devices
toroidal plasmas
transformers
TRAP program
trapped magnetic fields
zeta pinch

plasma cooling
DEF Temperature control of plasmas in controlled fusion operations.
GS cooling
. plasma cooling
RT controlled fusion
magnetohydrodynamic stability
plasmas (physics)
temperature control

plasma core reactors
DEF Nuclear reactors utilizing fissionable plasmas (such as uranium fluoride) for the fuel.
GS nuclear reactors
. plasma core reactors
RT critical mass
nuclear power plants
nuclear research
plasmas (physics)
radioactive wastes
reactor cores
∞ reactors
reflectors
waste disposal

plasma currents
DEF Electric currents induced in plasmas by injection of fast ion beams or some other means.
GS electric current
. plasma currents
RT beam currents
controlled fusion
eddy currents
electric discharges
electrical resistivity
field aligned currents
high current
ionospheric currents
line current
low currents
magnetohydrodynamics
plasma–particle interactions
plasmas (physics)
ring currents
spheromaks
toroidal plasmas

plasma cylinders
GS plasma cylinders
. cylindrical plasmas
RT ∞ cylinders
cylindrical bodies
cylindrical shells
plasma antennas
plasmaguides
plasmas (physics)

plasma decay
GS decay
. plasma decay
RT afterglows
electromagnetic wave transmission
helium afterglow
magnetohydrodynamic stability
plasmas (physics)

plasma density
GS density (number/volume)
. particle density (concentration)
. . plasma density
RT atmospheric density
atom concentration
cavitons
collisional plasmas
electron density (concentration)
electron–hole drops
ion density (concentration)
magnetoplasmadynamics
magnetospheric electron density
magnetospheric ion density
magnetospheric proton density
plasma bubbles
plasma drift
plasma pressure
plasmas (physics)
proton density (concentration)
space density
space plasmas
strongly coupled plasmas

plasma diagnostics
RT Fabry–Perot interferometers
microwave interferometers
OPEN Project
plasmas (physics)

resonance probes
space plasmas

plasma diffusion
UF *plasma dispersion*
GS diffusion
. plasma diffusion
RT ambipolar diffusion
colloidal generators
diffusion waves
electron diffusion
gaseous self-diffusion
ion motion
ionic diffusion
plasmas (physics)

plasma diodes
GS electronic equipment
. diodes
. . plasma diodes
RT cesium diodes
plasmas (physics)

plasma discharges
USE **plasma jets**

plasma dispersion
USE **plasma diffusion**

plasma display devices
DEF Digital matrix flat panel devices in which small gas discharge plasma cells are used as light emitting sources.
GS display devices
. plasma display devices
RT ∞ devices
gas ionization
glow discharges
light sources
plasmas (physics)

plasma drift
DEF Movement in the ionosphere of ion and plasma concentration by electric field variations in the upper atmosphere.
RT magnetohydrodynamic stability
plasma density
plasma waves
plasmas (physics)

plasma dynamics
UF *snowplow effect*
RT ∞ dynamics
hydrodynamic equations
Langmuir turbulence
magnetohydrodynamics
plasmas (physics)

plasma electrodes
GS electrodes
. plasma electrodes
RT hot-wire flowmeters
plasmaguides
plasmatrons
zeta pinch

plasma engines
DEF Reaction engines using magnetically accelerated plasma as a propellant. Plasma engines are types of electrical engines.
GS engines
. rocket engines
. . electric rocket engines
. . . electrothermal engines
. . . . plasma engines
. . . . . two stage plasma engines
plasma power sources
. plasma engines
. . two stage plasma engines
RT arc jet engines
coaxial plasma accelerators
high temperature propellants
ion engines
mercury ion engines
plasmas (physics)
pulsed jet engines
resistojet engines
RIT engines

plasma equilibrium
DEF Condition of plasma in which the constituent particles or fluid elements are unaccelerated or collectively at rest in steady flow.
RT ballooning modes
beta factor
confinement
electron-hole drops
∞ equilibrium
equilibrium flow
magnetic mirrors
magnetohydrodynamic stability
plasmas (physics)
strongly coupled plasmas

plasma etching
DEF Removal of material by use of a focused plasma beam.
GS etching
. plasma etching
RT plasmas (physics)
sputtering

plasma flow
USE **magnetohydrodynamic flow**

plasma flux measurement
RT interferometry
magnetohydrodynamic flow
microwave plasma probes
plasmas (physics)
rotating plasmas
speckle interferometry

plasma focus
DEF A highly compressed plasma.
GS foci
. plasma focus
particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . dense plasmas
. . . . . plasma focus
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . dense plasmas
. . . . . plasma focus
RT nuclear fusion
plasma compression
strongly coupled plasmas
zeta pinch

plasma frequencies
GS frequencies
. plasma frequencies
RT electron density (concentration)
electrostatic probes
free electrons
plasmas (physics)
plasmons

plasma generation
USE **plasma generators**

plasma generators
SN (EXCLUDES MAGNETOHYDRODYNAMIC OR THERMONUCLEAR GENERATORS OF ELECTRIC POWER)
DEF Machines, such as electric arc chambers, that will generate very high heat fluxes to convert neutral gases into plasmas. Devices which use the interaction of plasmas and electrical field to generate currents. Used for plasma generation.
UF *plasma generation*
GS plasma generators
. plasma guns
. plasmatrons
. . duoplasmatrons
. Scylla
. tokamak devices
. . Joint European Torus
RT arc chambers
arc generators
closed cycles
colloidal generators
electric arcs
exploding wires
∞ generators
Hall generators
high temperature research
ion injection
ion sources
magnetohydrodynamic generators
Penning discharge
plasmas (physics)
pulse generators
thermal plasmas
thermonuclear power generation
wind tunnel drives

plasma guns
GS plasma generators
. plasma guns
RT coaxial plasma accelerators
crossed field guns
electron guns
∞ guns
magnetic lenses
plasmas (physics)
plasmatrons

plasma heating
GS heating
. plasma heating
. . electron cyclotron heating
RT arc heating
beam injection
beta factor
bumpy toruses
electron cyclotron resonance
energy transfer
gas heating
induction heating
ionospheric heating
kinetic heating
Langmuir turbulence
magnetic pumping
magnetohydrodynamic shear heating
plasma temperature
plasmas (physics)
radio frequency heating
relativistic electron beams
shock heating

plasma instability
USE **magnetohydrodynamic stability**

plasma interaction experiment
DEF A NASA Lewis experiment, the first of which was launched piggyback with Landsat 3 in 1978 to study the charged particle space plasma

environment and its effect on spacecraft surfaces operating at high voltages. The experiment lasted several hours as planned. The second was launched piggyback with Iras in 1983. Used for PIX.
UF *PIX*
GS payloads
. Space Shuttle payloads
. . plasma interaction experiment
spaceborne experiments
. plasma interaction experiment
RT ∞ interactions
Landsat 3
plasmas (physics)
space density
SPHINX

plasma interactions
GS *plasma interactions*
. plasma–electromagnetic interaction
. . laser plasma interactions
. plasma–particle interactions
RT ∞ interactions
plasmas (physics)
solar planetary interactions
space plasmas
wave interaction
wave–particle interactions
Weibel instability

plasma jet synthesis
RT chemical reactions
plasmas (physics)
∞ synthesis

plasma jet wind tunnels
UF *hydrodynamic tunnels*
GS test facilities
. wind tunnels
. . hypersonic wind tunnels
. . . plasma jet wind tunnels
. . hypervelocity wind tunnels
. . . plasma jet wind tunnels
RT plasmas (physics)

plasma jets
UF *plasma arcs*
plasma discharges
GS particles
. charged particles
. . plasma jets
. . . radio jets (astronomy)
RT ∞ arcs
crossed field guns
drop transfer
electron beams
electron bombardment
fluid jets
ion injection
∞ jets
low density wind tunnels
magnetic lenses
plasma torches
plasmas (physics)
plasmatrons
pulse diffraction
relativistic electron beams
relativistic plasmas
toroidal discharge
vapor jets

plasma layers
GS particles
. charged particles
. . plasma layers
. . . plasma sheaths
RT atmospheric stratification
∞ layers
plasmas (physics)
space plasmas
∞ transition layers

plasma lifetime
GS life (durability)
. plasma lifetime
RT magnetohydrodynamic stability
plasmas (physics)

plasma loss
RT limiters (fusion reactors)
losses
magnetohydrodynamic stability
plasmas (physics)

plasma oscillations
UF *ion oscillation*
plasma perturbation
GS oscillations
. plasma oscillations
RT electron oscillations
ion acoustic waves
Langmuir turbulence
nonuniform plasmas
plasmapause
plasmas (physics)
plasmons

plasma perturbation
USE **plasma oscillations**

plasma physics
UF *plasma theory*
GS rigid rotors (plasma physics)
. plasma physics
RT alpha plasma devices
BBGKY hierarchy
beta factor
boundary layer plasmas
cavitons
controlled fusion
electron runaway (plasma physics)
grand unified theory
Hall accelerators
instantons
Larmor radius
Liouville equations
magnetic field configurations
magnetohydrodynamics
magnetohydrostatics
negative ions
neutral sheets
OPEN Project
∞ physics
plasmapause
plasmas (physics)
radiation trapping
∞ science
semiconductor plasmas
space plasmas
theoretical physics
thermodynamics
tokamak devices
unified field theory
uranium plasmas

plasma pinch
GS pinch effect
. plasma pinch
. . screw pinch
. . theta pinch
. . zeta pinch
RT magnetohydrodynamic stability
plasmas (physics)
Q devices

plasma potentials
GS potential energy
. plasma potentials
RT Debye–Huckel theory
magnetohydrodynamic stability
nonequilibrium plasmas
plasmas (physics)
∞ potential

plasma power sources
GS plasma power sources
. plasma engines
. . two stage plasma engines
RT electric propulsion
∞ energy sources
plasmas (physics)
∞ power supplies
thermionic converters

plasma pressure
GS pressure
. plasma pressure
RT plasma compression
plasma density
plasmas (physics)

plasma probes
GS measuring instruments
. plasma probes
. . electrostatic probes
RT ion sheaths
plasmaguides
plasmas (physics)
radio frequency impedance probes

plasma propulsion
GS propulsion
. electric propulsion
. . plasma propulsion
. low thrust propulsion
. . plasma propulsion
. spacecraft propulsion
. . plasma propulsion
RT duoplasmatrons
electromagnetic propulsion
electrostatic propulsion
gaseous fission reactors
ion propulsion
magnetic annular arc
magnetic sails
magnetohydrodynamics
magnetoplasmadynamics
nuclear electric propulsion
plasmas (physics)
plasmatrons

plasma pumping
DEF Application of radiation of appropriate frequencies to plasma, to increase the population of atoms or molecules in the higher energy states.
RT gas injection
molecular pumps
plasmas (physics)
∞ pumping

plasma radiation
RT electron radiation
fluorescence
glow discharges
ion cyclotron radiation
laser induced fluorescence
luminescence
nonequilibrium plasmas
optical resonance
phosphorescence
plasmas (physics)

polarized radiation
∞ radiation
relativistic plasmas

plasma renin activity
USE immunoassay

plasma resonance
GS resonance
. plasma resonance
RT cavities
cyclotron resonance
electromagnetic interactions
electron cyclotron resonance
plasmas (physics)
resonance lines
resonance probes

plasma rings
USE toroidal plasmas

plasma sheaths
DEF The boundary layers of charged particles between plasmas and their surrounding walls, electrodes, or other plasmas. Envelopes of ionized gases that surround bodies moving through an atmosphere at hypersonic velocities.
GS particles
. charged particles
. . plasma layers
. . . plasma sheaths
sheaths
. plasma sheaths
RT blackout (propagation)
boundary layer plasmas
ion sheaths
magnetohydrodynamic shear heating
magnetosheath
metallic plasmas
missiles
nonequilibrium plasmas
plasmas (physics)
reentry communication
reentry effects
reentry physics
system generated electromagnetic pulses
uncontrolled reentry (spacecraft)

plasma slabs
GS particles
. charged particles
. . plasma slabs
RT magnetohydrodynamic stability
plasmas (physics)

plasma sound waves
USE magnetohydrodynamic waves
plasma waves

plasma spectra
GS spectra
. plasma spectra
RT emission spectra
energy spectra
optical resonance
plasmas (physics)
radiation spectra

plasma spraying
GS spraying
. plasma spraying
RT coating
coatings
flame spraying
metal matrix composites
plasmas (physics)
sprayed coatings

plasma stability
USE magnetohydrodynamic stability

plasma temperature
GS temperature
. plasma temperature
RT ion temperature
magnetohydrodynamic stability
plasma heating
plasmas (physics)
thermal plasmas

plasma theory
USE plasma physics

plasma torches
DEF Burners which attain 50,000 degrees C temperatures by the use of plasma gas injected into an electric arc. Plasma torches are used for welding, spraying molten metal, and cutting hard rock or hard metals.
GS torches
. plasma torches
RT plasma arc cutting
plasma arc welding
plasma jets
plasmas (physics)

plasma turbulence
GS turbulence
. magnetohydrodynamic turbulence
. . plasma turbulence
. . . Langmuir turbulence
RT magnetohydrodynamic flow
magnetohydrodynamic stability
plasmas (physics)

plasma waves
UF *plasma sound waves*
GS elastic waves
. magnetohydrodynamic waves
. . plasma waves
. . . electrostatic waves
RT collisional plasmas
diffusion waves
electroacoustic waves
electron plasma
ion acoustic waves
ion cyclotron radiation
ionic waves
Landau damping
Langmuir turbulence
magnetoacoustic waves
magnetoelastic waves
nonuniform plasmas
plasma drift
plasmas (physics)
shock waves
space plasmas
wave packets
wave-particle interactions

plasma-electromagnetic interaction
GS electromagnetic interactions
. plasma-electromagnetic interaction
. . laser plasma interactions
plasma interactions
. plasma-electromagnetic interaction
. . laser plasma interactions
RT electromagnetic coupling
∞ interactions
plasmas (physics)
space plasmas
wave-particle interactions

plasma-particle interactions
GS particle interactions
. plasma-particle interactions
plasma interactions
. plasma-particle interactions
RT beam injection
beam plasma amplifiers
charge exchange
electron phonon interactions
electron plasma
∞ interactions
particle theory
plasma currents
plasmas (physics)
relativistic electron beams
relativistic plasmas
SPHINX
wave-particle interactions

plasmadynamic lasers
DEF Stimulated emission devices in which the lasing gas flow has been replaced with a lasing plasma flow of atoms or ions.
GS stimulated emission devices
. lasers
. . plasmadynamic lasers
RT coherent light
gasdynamic lasers
laser applications
plasmas (physics)

plasmaguides
GS waveguides
. plasmaguides
RT beam waveguides
Earth-ionosphere waveguide
electromagnetic wave transmission
microwave plasma probes
plasma cylinders
plasma electrodes
plasma probes
plasmas (physics)
wave propagation

plasmapause
SN (LIMITED TO EARTH'S ATMOSPHERE)
RT cosmic plasma
Earth magnetosphere
ionopause
plasma clouds
plasma oscillations
plasma physics
plasmas (physics)
solar wind

plasmas (physics)
SN (LIMITED TO COMPLETELY IONIZED MATTER; FOR PARTIALLY IONIZED GASES SEE IONIZED GASES)
DEF Electrically conductive gases comprised of neutral particles, ionized particles, and free electrons but which, taken as a whole, are electrically neutral. Plasmas are further characterized by relatively large intermolecular distances, large amounts of energy stored in the internal energy levels of the particles, and the presence of plasma sheaths at all boundaries of the plasma. Plasmas are sometimes referred to as a fourth state of matter. Used for electrostatic plasma, ionized plasma, magnetoionic plasma, magnetoplasmas, and plasmoids.
UF *electrostatic plasma*
ionized plasmas
magnetoionic plasma
magnetoplasmas
plasmoids
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . argon plasma

. . . . beta particles
. . . . boundary layer plasmas
. . . . cold plasmas
. . . . collisional plasmas
. . . . . strongly coupled plasmas
. . . . collisionless plasmas
. . . . cosmic plasma
. . . . cylindrical plasmas
. . . . dense plasmas
. . . . . plasma focus
. . . . . strongly coupled plasmas
. . . . electron plasma
. . . . electron–positron plasmas
. . . . elliptical plasmas
. . . . helium plasma
. . . . high temperature plasmas
. . . . hydrogen plasma
. . . . . deuterium plasma
. . . . laser plasmas
. . . . metallic plasmas
. . . . . cesium plasma
. . . . . uranium plasmas
. . . . microplasmas
. . . . nitrogen plasma
. . . . nonequilibrium plasmas
. . . . nonuniform plasmas
. . . . oxygen plasma
. . . . rarefied plasmas
. . . . relativistic plasmas
. . . . rotating plasmas
. . . . semiconductor plasmas
. . . . space plasmas
. . . . . solar wind
. . . . . stellar winds
. . . . spherical plasmas
. . . . thermal plasmas
. . . . toroidal plasmas
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . argon plasma
. . . . beta particles
. . . . boundary layer plasmas
. . . . cold plasmas
. . . . collisional plasmas
. . . . . strongly coupled plasmas
. . . . collisionless plasmas
. . . . cosmic plasma
. . . . cylindrical plasmas
. . . . dense plasmas
. . . . . plasma focus
. . . . . strongly coupled plasmas
. . . . electron plasma
. . . . electron–positron plasmas
. . . . elliptical plasmas
. . . . helium plasma
. . . . high temperature plasmas
. . . . hydrogen plasma
. . . . . deuterium plasma
. . . . laser plasmas
. . . . metallic plasmas
. . . . . cesium plasma
. . . . . uranium plasmas
. . . . microplasmas
. . . . nitrogen plasma
. . . . nonequilibrium plasmas
. . . . nonuniform plasmas
. . . . oxygen plasma
. . . . rarefied plasmas
. . . . relativistic plasmas
. . . . rotating plasmas
. . . . semiconductor plasmas
. . . . space plasmas
. . . . . solar wind
. . . . . stellar winds
. . . . spherical plasmas
. . . . thermal plasmas
. . . . toroidal plasmas
RT alpha plasma devices
beam plasma amplifiers
blackout (propagation)
chemical elements
combustion physics
core flow
Cyclops plasma accelerator
Debye length
deuteron irradiation
deuterons
duoplasmatrons
electric arcs
electron energy
gases
high temperature fluids
ionized gases
ions
Kelvin–Helmholtz instability
Landau factor
laser fusion
laser plasma interactions
light ions
Liouville equations
low density research
magnetic compression
magnetohydrodynamic flow
magnetohydrodynamic stability
magnetohydrodynamics
magnetolonics
microwave plasma probes
neutral gases
Onsager phenomenological coefficient
∞ physics
plasma acceleration
plasma accelerators
plasma arc cutting
plasma arc welding
plasma chemistry
plasma clouds
plasma composition
plasma compression
plasma conductivity
plasma control
plasma cooling
plasma core reactors
plasma currents
plasma cylinders
plasma decay
plasma density
plasma diagnostics
plasma diffusion
plasma diodes
plasma display devices
plasma drift
plasma dynamics
plasma engines
plasma equilibrium
plasma etching
plasma flux measurement
plasma frequencies
plasma generators
plasma guns
plasma heating
plasma interaction experiment
plasma interactions
plasma jet synthesis
plasma jet wind tunnels
plasma jets
plasma layers
plasma lifetime
plasma loss
plasma oscillations
plasma physics
plasma pinch
plasma potentials
plasma power sources
plasma pressure
plasma probes
plasma propulsion
plasma pumping
plasma radiation
plasma resonance
plasma sheaths
plasma slabs
plasma spectra
plasma spraying
plasma temperature
plasma torches
plasma turbulence
plasma waves
plasmadynamic lasers
plasma–electromagnetic interaction
plasmaguides
plasma–particle interactions
plasmapause
plasmasphere
plasmatrons
radiation belts
rarefied gas dynamics
Scylla
solar physics
space charge
SPHINX
stellar magnetic fields
tearing modes (plasmas)
thermal dissociation
thermodynamics
thermonuclear reactions
two stage plasma engines

plasmas-in-space payload
USE **AMPS (satellite payload)**

plasmasphere
DEF Envelope of highly ionized gases surrounding the Earth or another planet.
RT atmospheric ionization
chemosphere
Earth atmosphere
Earth magnetosphere
OPEN Project
plasmas (physics)
upper atmosphere

plasmatrons
GS ion sources
. plasmatrons
. . duoplasmatrons
plasma generators
. plasmatrons
. . duoplasmatrons
RT plasma electrodes
plasma guns
plasma jets
plasma propulsion
plasmas (physics)

plasmoids
USE **plasmas (physics)**

plasmolysis
RT cells (biology)
cytology
dehydration

plasmons
SN (EXCLUDES ORGANIC CYTOPLASMIC CONDITIONS)
GS electromagnetic radiation
. plasmons
elementary excitations
. plasmons

polaritons
. plasmons
RT electron gas
excitons
magnetohydrodynamic stability
magnons
phonons
plasma frequencies
plasma oscillations
polarons

plasters
GS plasters
. gypsum
. parapiasts
RT casts
grout
molding materials
mortars (material)
pastes

plastic aircraft structures
GS aircraft structures
. plastic aircraft structures
RT aircraft construction materials
aircraft survivability
boron–epoxy composites
glass fiber reinforced plastics
plastics

plastic anisotropy
GS anisotropy
. plastic anisotropy
. . elastic anisotropy
RT viscoplasticity

plastic bodies
RT beams (supports)
∞ bodies
cylindrical bodies
elastic bodies
elastic plates
elastoplasticity
plastic properties
plastic shells
rigid structures

plastic coatings
GS coatings
. plastic coatings
RT antiradar coatings
encapsulating
polymeric films
protective coatings
sprayed coatings

plastic deformation
UF *Luder bands*
plastic yielding
strain softening
GS deformation
. plastic deformation
RT ∞ bands
bending
Bordoni peaks
creep properties
creep tests
ductile–brittle transition
elastic deformation
elongation
J integral
plane strain
Saint Venant principle
shear creep
∞ slip
strain distribution
stress propagation
stress relaxation
stress–strain relationships
stretching
structural strain
superplastic forming
superplasticity
temperature inversions
tensile creep
tensile deformation
thermomechanical treatment
warpage
work softening
yield strength

plastic fibers
(added June 1995)
GS fibers
. plastic fibers
RT fiber optics
glass fibers
optical fibers
plastic properties
plastics
waveguides

plastic films
USE polymeric films

plastic flow
GS fluid flow
. plastic flow
. . Tresca flow
RT creep properties
or flow
internal friction
rheology
shear flow
steady state creep
stress relaxation
superplasticity
viscoelasticity
viscoplasticity

plastic memory
RT shape memory alloys
stress relaxation

plastic plates
SN (STRUCTURAL PLATES EXHIBITING PLASTIC PROPERTIES)
GS structural members
. plates (structural members)
. . plastic plates
RT elastic plates
elastoplasticity
reinforced plates

plastic propellants
GS propellants
. solid propellants
. . plastic propellants
RT chemical fuels
composite propellants
explosives
gelled propellants
HTPB propellants
monopropellants
plasticizers
polybutadiene tetranitramine
pyrotechnics

plastic properties
DEF The tendency of a loaded body to assume a deformed state other than its original state when the load is removed. Used for plasticity.
UF *plasticity*
GS mechanical properties
. plastic properties
. . elastoplasticity
. . photoplasticity
. . superplasticity
. . thermoplasticity
. . viscoplasticity
. . yield point
RT cohesion
cold flow tests
ductility
elastic properties
fatigue (materials)
flexibility
hardness
influence coefficient
method of characteristics
plastic bodies
plastic fibers
∞ properties
rheology
semisolids
stress relaxation
stress tensors
structural stability

plastic shells
GS shells (structural forms)
. plastic shells
RT cylindrical shells
elastic shells
elastoplasticity
plastic bodies
reinforced shells
shell stability

plastic tapes
RT adhesives
magnetic tapes
∞ tapes

plastic yielding
USE plastic deformation

plasticity
USE plastic properties

plasticizers
UF *casting solvents*
elasticizers
GS additives
. plasticizers
RT case bonded propellants
coatings
Domino propellants
esters
plastic propellants
propellant additives
Skydrol (trademark)
solid propellants
solid rocket binders
surfactants
triacetin

plastics
DEF Materials that contain as an essential ingredient one or more organic polymeric substances of large molecular weight, are solid in their finished state, and at some stage in their manufacture or processing into finished articles can be shaped by flow.
GS plastics
. Delrin (trademark)
. Perspex (trademark)
. polybutadiene
. polyethylenes
. . polyethylene terephthalate
. polyisobutylene
. polypropylene
. polystyrene
. . styrofoam (trademark)

. polytetrafluoroethylene
. . teflon (trademark)
. polyvinyl alcohol
. polyvinyl chloride
. polyvinyl fluoride
. reinforced plastics
. . carbon fiber reinforced plastics
. . . carbon–phenolic composites
. . glass fiber reinforced plastics
. . micarta
. synthetic resins
. . addition resins
. . . acrylic resins
. . . vinyl copolymers
. . polyester resins
. . polyether resins
. . . PEEK
. . . polymethyl methacrylate
. . thermoplastic resins
. . . PEEK
. . . quinoxalines
. . . thermoplastic films
. . thermosetting resins
. . . epoxy resins
. . . . phenolic epoxy resins
. . . furan resins
. . . . polyamide resins
. . . . . Kevlar (trademark)
. . . . . Nylon (trademark)
. . . phenolic resins
. . . . micarta
. . . . phenolic epoxy resins
RT acrylonitriles
aramid fibers
boron reinforced materials
∞ construction materials
elastomers
fluoropolymers
furans
injection molding
ion exchange resins
Kapton (trademark)
∞ materials science
molding materials
organic materials
petroleum products
plastic aircraft structures
plastic fibers
∞ polymers
sheet molding compounds
tetrahydrofuran
thioplastics

plastisols
DEF A suspension of a finely divided polymer in a plasticizer.
GS mixtures
. dispersions
. . plastisols
. . . smoks
RT colloids
composite propellants
double base propellants
resins

PLAT system
UF *pilot landing aid television system*
GS communication equipment
. PLAT system
telecommunication
. PLAT system
television systems
. PLAT system
RT landing aids
∞ systems

plate (metal)
USE **metal plates**

plate theory
RT flat plates
structural analysis
∞ theories

plateaus
DEF Broadly, and comparatively flat areas of great extent and elevation; specifically, extensive land regions considerably elevated (more than 150–300 meters in altitude) above the adjacent country or above sea level. They are commonly limited on at least one side by an abrupt descent, have a flat or nearly smooth surface but are often dissected by deep valleys and surmounted by high hills or high mountains, and have a large part of their total surface at or near the summit level. Plateaus are usually higher and have more noticeable relief than plains (they often represent elevated plains), and are usually higher and more extensive than mesas. They may be tectonic, residual, or volcanic in origin.
GS landforms
. terraces (landforms)
. . plateaus
. . . Alleghany Plateau (US)
. . . Colorado Plateau (US)
. . . Great Basin (US)
. . . mesas
. . . . buttes
. . . piedmonts
. . . . Central Piedmont (US)
RT apexes
erosion
highlands
∞ peaks
plains
stratigraphy

platelets
RT blood coagulation
blood groups
histology
thromboplastin

platens
RT ∞ plates
presses
∞ pressing
punches
rams (presses)
rollers
tools

∞ **plates**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT corrugating
disks (shapes)
flat plates
metal coatings
metal plates
microchannel plates
panels
parallel plates
photographic plates
platens
plates (structural members)
plating
rectangular plates
scatter plates (optics)
thick plates
thin plates
trays

plates (structural members)
GS structural members
. plates (structural members)
. . anisotropic plates
. . annular plates
. . cantilever plates
. . circular plates
. . corrugated plates
. . elastic plates
. . end plates
. . flat plates
. . girder webs
. . metal plates
. . . boiler plate
. . orthotropic plates
. . perforated plates
. . plastic plates
. . porous plates
. . rectangular plates
. . reinforced plates
. . thick plates
. . thin plates
RT girders
metal sheets
orthotropism
∞ plates
Reissner theory
slabs

plates (tectonics)
DEF Rigid divisions of the outer surface of the Earth (lithosphere) which moves over a weaker layer (asthenosphere). The plates are about 100 km thick, and the continents, which are 40 km thick, rest on the plates and moves with them.
RT Earth crust
Earth mantle
Earth planetary structure
earthquakes
geological faults
geophysics
lithosphere
sea floor spreading
structural properties (geology)
subduction (geology)
tectonics

∞ **platforms**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Automatic Universal Orbiting Stations
data collection platforms
flight mechanics
floors
flying platforms
guidance (motion)
inertial platforms
landforms
launching pads
offshore platforms
slabs
solettas
space platforms
space stations
stabilized platforms
supports
synchronous platforms

plating
GS plating
. electroplating
. flame plating
. ion plating
. nickel plate
RT anodic stripping
cathodic coatings
cladding

deposition
deposits
electrodeposition
electroless deposition
finishes
laminates
metal coatings
metal finishing
metallizing
∞ plates
protective coatings
substrates
thin films

platinum
GS chemical elements
. platinum
. . platinum isotopes
metals
. transition metals
. . platinum
. . . platinum isotopes
RT platinum black

platinum alloys
GS alloys
. platinum alloys
RT iridium alloys
rhodium alloys

platinum black
GS particles
. metal particles
. . metal powder
. . . platinum black
. powder (particles)
. . metal powder
. . . platinum black
RT catalysts
platinum

platinum compounds
GS platinum compounds
. platinum oxides
RT ∞ chemical compounds
Group 8 compounds
∞ metal compounds

platinum isotopes
GS chemical elements
. nuclides
. . isotopes
. . . platinum isotopes
. platinum
. . platinum isotopes
metals
. transition metals
. . platinum
. . . platinum isotopes

platinum oxides
GS chalcogenides
. oxides
. . metal oxides
. . . platinum oxides
platinum compounds
. platinum oxides

playas
GS land
. plains
. . playas
landforms
. plains
. . playas
RT deserts
lakes

playbacks
RT magnetic tapes
∞ recorders
recording
records
∞ tapes
video disks

PLC effect
USE Portevin–le Chatelier effect

Pleiades cluster
GS celestial bodies
. star clusters
. . open clusters
. . . Pleiades cluster
RT ∞ clusters
Taurus constellation

plenum chambers
RT air intakes
∞ chambers
ducts
exhaust systems
fuel systems
intake systems
manifolds
∞ water intakes

plethysmography
GS bioengineering
. biometrics
. . plethysmography
. . . electroplethysmography

pleurae
GS anatomy
. pleurae
membranes
. pleurae
RT lungs
respiratory system

pleurotin
GS drugs
. antibiotics
. . pleurotin
RT staphylococcus

plexiglass (trademark)
USE polymethyl methacrylate

plies
USE layers

∞ **plots**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT charts
display devices
plotters
plotting
sites

plotters
UF *plotting instruments*
GS recording instruments
. plotters
. . x–y plotters
RT computer graphics
digital to analog converters
display devices
navigation aids
peripheral equipment (computers)
∞ plots
plotting
position indicators
printers
remote consoles

plotting
RT analog to digital converters
display devices
navigation
∞ plots
plotters
printing
recording

plotting instruments
USE plotters

plowed fields
USE farmlands

plowing
GS cultivation
. plowing
RT agriculture
farm crops
farmlands
grasslands
planting
plants (botany)
plows
sod
tractors

plows
RT agriculture
mixers
planting
plowing

PLSS
USE portable life support systems

plug nozzles
GS exhaust nozzles
. plug nozzles
RT aerospike engines
annular nozzles
conical nozzles
nozzle geometry
∞ nozzles
rocket nozzles
spike nozzles

plugging
UF *clogging*
RT agglomeration
blocking
caulking
closing
closures
constrictions
fouling
plugs
sealing
seals (stoppers)

plugs
SN (EXCLUDES SPARKPLUGS OR ELECTRICAL CONNECTORS)
GS seals (stoppers)
. plugs
RT blocking
closures
labyrinth seals
outlets
plugging
stopping

Plum Brook Reactor
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . Plum Brook Reactor
. nuclear research and test reactors

. . **Plum Brook Reactor**

plumage
RT **birds**

plumbane
USE **lead compounds**
metal hydrides

plumes
GS **plumes**
. rocket exhaust
RT **chimneys**
condensates
pollution transport
shock waves

plungers
RT *mixers*
pistons
rams (presses)
rams (pumps)

Pluto (planet)
GS **celestial bodies**
. **planets**
. . **Pluto (planet)**
RT **Charon**
Pluto atmosphere

Pluto atmosphere
GS **environments**
. **extraterrestrial environments**
. . **planetary environments**
. . . **planetary atmospheres**
. . . . **Pluto atmosphere**
RT **Pluto (planet)**

Pluto reactors
GS *nuclear reactors*
. **Pluto reactors**
RT **nuclear ramjet engines**
nuclear rocket engines
supersonic low altitude missile

Pluto satellites
(added July 1995)
GS **celestial bodies**
. **natural satellites**
. . **Pluto satellites**
. . . **Charon**

plutonium
GS **chemical elements**
. **actinide series**
. . **transuranium elements**
. . . **plutonium**
. . . . **plutonium isotopes**
. . . . . **plutonium 238**
. . . . . **plutonium 239**
. . . . . **plutonium 240**
. . . . . **plutonium 241**
. . . . . **plutonium 244**
. **nuclides**
. . **isotopes**
. . . **radioactive isotopes**
. . . . **transuranium elements**
. . . . . **plutonium**
. . . . . **plutonium isotopes**
. . . . . **plutonium 238**
. . . . . **plutonium 239**
. . . . . **plutonium 240**
. . . . . **plutonium 241**
. . . . . **plutonium 244**
metals
. **actinide series**
. . **transuranium elements**
. . . **plutonium**
. . . . **plutonium isotopes**
. . . . . **plutonium 238**
. . . . . **plutonium 239**
. . . . . **plutonium 240**
. . . . . **plutonium 241**
. . . . . **plutonium 244**
RT **fissionable materials**
nuclear fuels

plutonium 238
GS **chemical elements**
. **actinide series**
. . **transuranium elements**
. . . **plutonium**
. . . . **plutonium isotopes**
. . . . . **plutonium 238**
. **nuclides**
. . **isotopes**
. . . **radioactive isotopes**
. . . . **transuranium elements**
. . . . . **plutonium**
. . . . . **plutonium isotopes**
. . . . . **plutonium 238**
metals
. **actinide series**
. . **transuranium elements**
. . . **plutonium**
. . . . **plutonium isotopes**
. . . . . **plutonium 238**

plutonium 239
GS **chemical elements**
. **actinide series**
. . **transuranium elements**
. . . **plutonium**
. . . . **plutonium isotopes**
. . . . . **plutonium 239**
. **nuclides**
. . **isotopes**
. . . **radioactive isotopes**
. . . . **transuranium elements**
. . . . . **plutonium**
. . . . . **plutonium isotopes**
. . . . . **plutonium 239**
metals
. **actinide series**
. . **transuranium elements**
. . . **plutonium**
. . . . **plutonium isotopes**
. . . . . **plutonium 239**

plutonium 240
GS **chemical elements**
. **actinide series**
. . **transuranium elements**
. . . **plutonium**
. . . . **plutonium isotopes**
. . . . . **plutonium 240**
. **nuclides**
. . **isotopes**
. . . **radioactive isotopes**
. . . . **transuranium elements**
. . . . . **plutonium**
. . . . . **plutonium isotopes**
. . . . . **plutonium 240**
metals
. **actinide series**
. . **transuranium elements**
. . . **plutonium**
. . . . **plutonium isotopes**
. . . . . **plutonium 240**

plutonium 241
GS **chemical elements**
. **actinide series**
. . **transuranium elements**
. . . **plutonium**
. . . . **plutonium isotopes**
. . . . . **plutonium 241**
. **nuclides**
. . **isotopes**
. . . **radioactive isotopes**
. . . . **transuranium elements**
. . . . . **plutonium**
. . . . . **plutonium isotopes**
. . . . . **plutonium 241**
metals
. **actinide series**
. . **transuranium elements**
. . . **plutonium**
. . . . **plutonium isotopes**
. . . . . **plutonium 241**

plutonium 244
GS **chemical elements**
. **actinide series**
. . **transuranium elements**
. . . **plutonium**
. . . . **plutonium isotopes**
. . . . . **plutonium 244**
. **nuclides**
. . **isotopes**
. . . **radioactive isotopes**
. . . . **transuranium elements**
. . . . . **plutonium**
. . . . . **plutonium isotopes**
. . . . . **plutonium 244**
metals
. **actinide series**
. . **transuranium elements**
. . . **plutonium**
. . . . **plutonium isotopes**
. . . . . **plutonium 244**

plutonium alloys
GS **alloys**
. **plutonium alloys**
RT **nuclear fuel elements**
nuclear fuels

plutonium carbides
USE **plutonium compounds**

plutonium compounds
UF *plutonium carbides*
GS **actinide series compounds**
. **plutonium compounds**
. . **plutonium fluorides**
. . **plutonium oxides**
RT **ceramic nuclear fuels**
oo **chemical compounds**
oo **metal compounds**
nuclear fuels

plutonium fluorides
GS **actinide series compounds**
. **plutonium compounds**
. . **plutonium fluorides**
halogen compounds
. **fluorine compounds**
. . **fluorides**
. . . **metal fluorides**
. . . . **plutonium fluorides**
. **halides**
. . **fluorides**
. . . **metal fluorides**
. . . . **plutonium fluorides**
. . **metal halides**
. . . **metal fluorides**
. . . . **plutonium fluorides**

plutonium isotopes
GS **chemical elements**
. **actinide series**
. . **transuranium elements**
. . . **plutonium**

. . . . plutonium isotopes
. . . . . plutonium 238
. . . . . plutonium 239
. . . . . plutonium 240
. . . . . plutonium 241
. . . . . plutonium 244
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . plutonium
. . . . . plutonium isotopes
. . . . . plutonium 238
. . . . . plutonium 239
. . . . . plutonium 240
. . . . . plutonium 241
. . . . . plutonium 244
metals
. actinide series
. . transuranium elements
. . . plutonium
. . . . plutonium isotopes
. . . . . plutonium 238
. . . . . plutonium 239
. . . . . plutonium 240
. . . . . plutonium 241
. . . . . plutonium 244

plutonium oxides
GS actinide series compounds
. plutonium compounds
. . plutonium oxides
chalcogenides
. oxides
. . metal oxides
. . . plutonium oxides
RT ceramic nuclear fuels
mixed oxides

plutonium recycle test reactor
UF *PRTR (reactor)*
GS nuclear electric power generation
. nuclear power reactors
. . plutonium recycle test reactor
nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . heavy water reactors
. . . . plutonium recycle test reactor
. nuclear power reactors
. . plutonium recycle test reactor
. nuclear research and test reactors
. . plutonium recycle test reactor
. water moderated reactors
. . plutonium recycle test reactor

pluviographs
USE rain gages
recording instruments

ply orientation
DEF The arrangement of bonded layers comprising laminated materials to obtain optimal strength or other characteristics.
RT alignment
composite materials
interlayers
laminates
∞ layers
multilayer insulation
∞ orientation
plywood
positioning
sandwich structures
stacking sequence (composite materials)
substrates

plywood
GS composite materials
. plywood
composite structures
. laminates
. . plywood
wood
. plywood
RT ply orientation
trees (plants)
wooden structures

pneumatic circuits
GS circuits
. pneumatic circuits
pneumatic equipment
. pneumatic circuits
RT fluidics
valves

pneumatic control
UF *pneumatic reset*
RT automatic control
automatic control valves
compressed gas
∞ control
control equipment
control valves
controllers
electronic control
engine control
fluid power
fluidics
hydraulic control
remote control

pneumatic equipment
GS pneumatic equipment
. gas valves
. pneumatic circuits
. pneumatic probes
RT air bag restraint devices
compressed air
cushions
∞ equipment
fluid amplifiers
fluid power
fluid switching elements
fluidics
gas generators
Golay detector cells
inflatable structures
servocontrol
servomechanisms
shock absorbers
∞ systems
valves

pneumatic probes
GS measuring instruments
. temperature measuring instruments
. . pneumatic probes
pneumatic equipment
. pneumatic probes
RT flow measurement
high temperature gases
mass flow rate
nozzle flow
pressure measurement

pneumatic reset
USE pneumatic control

pneumatics
DEF The branch of physics dealing with the mechanical properties of gases with particular emphasis on gas statics in closed systems.
GS fluid mechanics
. pneumatics
RT flow theory
fluid power
fluidics
gases
∞ hydraulics

pneumographs
USE pneumography

pneumography
UF *pneumographs*
RT biotelemetry
lungs
∞ measurement
radiography

pneumonia
GS diseases
. respiratory diseases
. . pneumonia
RT acquired immunodeficiency syndrome
bacterial diseases
congestion
viral diseases

pneumothorax
RT diseases
lungs
medical science

pnictides
USE Group 5A compounds

Pockels effect
USE birefringence

pocket mice
GS animals
. vertebrates
. . mammals
. . . rodents
. . . . mice
. . . . . pocket mice
RT rats

pods (external stores)
GS external stores
. pods (external stores)
RT cowlings
external store separation
fuel tanks
nacelles
wing-fuselage stores

POGO
UF *Polar Orbit Geophysical Observatory*
GS artificial satellites
. geophysical satellites
. . OGO
. . . POGO
. . . . OGO-4
. . . . OGO-6
. . . . OGO-C
observatories
. geophysical observatories
. . OGO
. . . POGO
. . . . OGO-4
. . . . OGO-6
. . . . OGO-C
RT Agena B rocket vehicle
EGO

POGO effects
GS vibration
. POGO effects
vibration effects

. POGO effects
RT ∞ effects
longitudinal stability

Pohlhausen method
UF *Pohlhausen solution*
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . Pohlhausen method
RT laminar boundary layer
∞ methodology
velocity distribution
viscous flow

Pohlhausen solution
USE Pohlhausen method

poikilothermia
UF *cold blooded animals*
GS animals
. poikilothermia
RT amphibia
body temperature
fishes
invertebrates
reptiles

Poincare problem
RT ∞ problems

Poincare spheres
GS symmetrical bodies
. bodies of revolution
. . spheres
. . . Poincare spheres
RT geometry

point defects
GS defects
. crystal defects
. . point defects
. . . vacancies (crystal defects)
. . . . Frenkel defects
. . . antisite defects
RT crystal dislocations
impurities
surface defects

point impact
GS impact
. point impact
RT electron impact
hypervelocity impact
ion impact
proton impact

point matching method (mathematics)
USE boundary value problems

point sources
GS radiation sources
. point sources
RT diffuse radiation
∞ energy sources
Huygens principle
light sources
spherical waves

point spread functions
DEF Mathematical functions involved in image processing.
GS functions (mathematics)
. point spread functions
RT image processing

point to point communication
GS communicating
. point to point communication
. . NASCOM network
RT radio communication
telecommunication
Westar satellites
wideband communication

pointers
USE dials

pointing control systems
GS pointing control systems
. annular suspension and pointing system
RT ∞ control
entry guidance (STS)
flight control
guidance (motion)
space flight
spacecraft control
∞ systems

∞ **points**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT nonpoint sources
points (mathematics)
position (location)

points (mathematics)
GS geometry
. Euclidean geometry
. . points (mathematics)
. . . fixed points (mathematics)
. . . inflection points
RT foci
loci
naked singularities
∞ points
reciprocal theorems
singularity (mathematics)

Poiseuille flow
USE laminar flow

∞ **poisoning**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT benzene poisoning
beryllium poisoning
carbon monoxide poisoning
carbon tetrachloride poisoning
curare
hydrocarbon poisoning
intoxication
lead poisoning
narcosis
poisoning (reaction inhibition)
toxic diseases
toxic hazards

poisoning (reaction inhibition)
RT control rods
neutron absorbers
nuclear reactions
∞ poisoning
radioactive wastes

poisoning (toxicology)
USE toxic diseases

poisons
GS poisons
. curare
. endotoxins
. pesticides
. . insecticides
. . . Carbamates (tradename)
. . . . urethanes
. . . DDT
. . . dieldrin
. . . phenothiazines
. phosgene
. strychnine
RT environment effects
environment pollution
environmental surveys
hazardous materials
nonpoint sources
pollution
toxicity

Poisson density functions
UF *poisson process*
GS functions (mathematics)
. Poisson density functions
statistical analysis
. Poisson density functions
RT continuity (mathematics)
discrete functions
exponential functions
sorting algorithms

Poisson equation
GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . Poisson equation
RT classical mechanics
electrostatics
∞ equations
isentrope
Laplace equation
vortex in cell technique

poisson process
USE Poisson density functions
stochastic processes

Poisson ratio
GS mechanical properties
. Poisson ratio
ratios
. Poisson ratio
RT Airy function
compressive strength
elastic properties
fiber strength
modulus of elasticity
nu factor
stress–strain diagrams
tensile strength

Polaire satellite
USE D-2 satellites

Poland
GS nations
. Poland
RT Central Europe
Europe

polar auroras
USE auroras

polar cap absorption
GS energy absorption
. radiation absorption
. . electromagnetic absorption
. . . polar cap absorption
. thermal absorption
. . polar cap absorption
RT ∞ absorption

polar caps
RT Antarctic regions

Arctic regions
∞ caps
Earth (planet)
Earth cryosphere
ice
Mars (planet)
planetary cryospheres

polar coordinates
DEF In a plane, a system of curvilinear coordinates in which a point is located by its distance r from the origin (or pole) and by the angle theta which a line (radius vector) joining the given point and the origin makes a fixed reference line, called the polar axis. In three dimensions, short for space polar coordinates.
GS coordinates
. polar coordinates
RT astronomical coordinates
planispheres
Smith chart
spherical coordinates

polar cusps
RT aeronomy
∞ cusps
Earth magnetosphere
geomagnetic latitude
geomagnetic tail
geomagnetism
geophysics
interplanetary space
lines of force
magnetic field configurations
magnetic fields
magnetopause
planetary magnetic fields
polar regions
space plasmas

polar gases
GS gases
. molecular gases
. . polar gases
RT carbon dioxide lasers
gas composition
gas discharges
gas dynamics
gas lasers
gas masers
polarization (charge separation)

polar ionosphere beacon
USE Beacon satellites

polar meteorology
GS meteorology
. polar meteorology
RT aerology
climatology
hydrology
ice reporting

polar navigation
GS navigation
. polar navigation
RT air navigation
celestial navigation
dead reckoning
digital navigation
inertial navigation
loran

Polar Orbit Geophysical Observatory
USE POGO

polar orbits
GS orbits
. spacecraft orbits
. . satellite orbits
. . . polar orbits
RT circular orbits
Earth orbits
elliptical orbits
equatorial orbits
low earth orbits
lunar orbits
lunar satellites
planetary orbits
space station polar platforms
TIROS satellites
twenty–four hour orbits

polar platforms (space stations)
USE space station polar platforms

polar radio blackout
GS electromagnetic interference
. radio frequency interference
. . blackout (propagation)
. . . polar radio blackout
RT auroral zones
ionospheric propagation

polar regions
UF *high latitudes*
GS regions
. polar regions
. . Antarctic regions
. . . McMurdo sound
. . . Ross ice shelf
. . Arctic regions
. . . subarctic regions
RT auroral zones
climatology
geography
permafrost
polar cusps
temperate regions
timberline

polar substorms
GS magnetic disturbances
. magnetic storms
. . polar substorms
storms
. magnetic storms
. . polar substorms

polar wandering (geology)
DEF Migration during geologic time of the Earth's poles of rotation and magnetic poles. Also known as polar migration. Used for Chandler motion.
UF *Chandler motion*
RT Chandler wobble
Earth axis
∞ Earth motion
Earth orientation
geodesy
nutation
periodic variations
precession

polarimeters
DEF Instruments for determining the degree of polarization of electromagnetic radiation, specifically the polarization of light. Used for spectropolarimeters.
UF *spectropolarimeters*
GS measuring instruments
. optical measuring instruments
. . polarimeters
optical equipment
. optical measuring instruments
. . polarimeters
RT astronomical polarimetry
chemical analysis
ellipsometers
optical measurement
photometers
polarimetry
polariscopes
polarizers
polarography
Solar Maximum Mission

polarimetry
GS optical measurement
. polarimetry
. . astronomical polarimetry
RT optical activity
optical measuring instruments
photometry
polarimeters
polarization (waves)

Polaris A1 missile
GS missiles
. ballistic missiles
. . intermediate range ballistic missiles
. . . polaris missiles
. . . . Polaris A1 missile
. surface to surface missiles
. . fleet ballistic missiles
. . . Polaris A1 missile
. . intermediate range ballistic missiles
. . . polaris missiles
. . . . Polaris A1 missile

Polaris A2 missile
GS missiles
. ballistic missiles
. . intermediate range ballistic missiles
. . . polaris missiles
. . . . Polaris A2 missile
. surface to surface missiles
. . fleet ballistic missiles
. . . Polaris A2 missile
. . intermediate range ballistic missiles
. . . polaris missiles
. . . . Polaris A2 missile

Polaris A3 missile
GS missiles
. ballistic missiles
. . intermediate range ballistic missiles
. . . polaris missiles
. . . . Polaris A3 missile
. surface to surface missiles
. . fleet ballistic missiles
. . . Polaris A3 missile
. . intermediate range ballistic missiles
. . . polaris missiles
. . . . Polaris A3 missile

polaris missiles
GS missiles
. ballistic missiles
. . intermediate range ballistic missiles
. . . polaris missiles
. . . . Polaris A1 missile
. . . . Polaris A2 missile
. . . . Polaris A3 missile
. surface to surface missiles
. . intermediate range ballistic missiles
. . . polaris missiles
. . . . Polaris A1 missile
. . . . Polaris A2 missile
. . . . Polaris A3 missile
RT multistage rocket vehicles
solid propellant rocket engines
XM–33 engine

Polaris submarines
USE guided missile submarines

polariscopes
DEF Instruments for detecting polarized radiation and investigating its properties.
GS measuring instruments
. polariscopes
. . Senarmont polariscopes
optical equipment
. polariscopes
. . Senarmont polariscopes
RT optical measuring instruments
polarimeters
polarization (waves)
polarizers

polaritons
GS polaritons
. plasmons

polarity
DEF The sign of the electric discharge associated with a given object, as an electrode or an ion.
RT ∞ dipoles
electric charge
electric fields
magnetic fields
magnetic poles
polarization (charge separation)
polarization (spin alignment)
quadrupoles

∞ **polarization**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The state of electromagnetic radiation when transverse vibrations take place in some regular manner, e.g., all in one plane, in a circle, in an ellipse, or in some other definite curve. With respect to particles in an electric field, the displacement of the charge centers within a particle in response to the electric force acting thereon. The response of the molecules of a paramagnetic medium (such as iron) when subjected to a magnetic field.
RT antiferroelectricity
bipolarity
linear polarization
magnetization
optical polarization
Overhauser effect
photoelastic analysis
polarization (charge separation)
polarization (spin alignment)
polarization (waves)
polarized radiation

polarization (charge separation)
UF *charge separation*
GS polarization (charge separation)
. dielectric polarization
. electrolytic polarization
RT charge distribution
charge transfer
deactivation
depolarization
electrets
electric charge
electric moments
electrode film barriers
electromigration
Hall effect
ionospheric drift
magnetization
overvoltage
polar gases
polarity
∞ polarization
pyroelectricity
∞ separation
Tafel law

polarization (spin alignment)
RT alignment
anisotropy
deactivation
magnetic properties
magnetization
∞ orientation
polarity
∞ polarization
rotation
spin tests

polarization (waves)
UF *polarization charts*
GS polarization (waves)
. circular polarization
. cross polarization
. elliptical polarization
. linear polarization
RT anisotropic media
anisotropy
beamforming
birefringence
BL Lacertae objects
collimation
electromagnetic properties
Faraday effect
Kerr electrooptical effect
Kerr magnetooptical effect
magneto-optics
monochromatization
optical coupling
optical properties
∞ orientation
photoelastic analysis
polarimetry
polariscopes
∞ polarization
polarization modulation
polarized electromagnetic radiation
polarizers
polarons
refractivity
rotation

polarization characteristics
GS magnetic properties
. polarization characteristics
RT Brewster angle
∞ characteristics
polarized radiation

polarization charts
USE graphs (charts)
polarization (waves)

polarization modulation
(added March 1995)
GS modulation
. polarization modulation
RT light modulation
optical communication
optical polarization
polarization (waves)
polarized electromagnetic radiation

polarized elastic waves
GS elastic waves
. polarized elastic waves
polarized radiation
. polarized elastic waves
RT S waves
seismic waves
sound waves

polarized electromagnetic radiation
GS electromagnetic radiation
. polarized electromagnetic radiation
. . polarized light
. . synchrotron radiation
polarized radiation
. polarized electromagnetic radiation
. . polarized light
. . synchrotron radiation
RT cross polarization
extraterrestrial radiation
Faraday effect
infrared radiation
Kerr cells
light (visible radiation)
linear polarization
Lyman alpha radiation
Lyman beta radiation
magneto-optics
monochromatic radiation
polarization (waves)
polarization modulation
polarizers
∞ radiation
radiative transfer
radio waves
stellar radiation
ultraviolet radiation

polarized light
GS electromagnetic radiation
. light (visible radiation)
. . polarized light
. polarized electromagnetic radiation
. . polarized light
polarized radiation
. polarized electromagnetic radiation
. . polarized light
RT ellipsometry
gegenschein
Kerr magnetooptical effect
monochromatic radiation
optical activity
optical depolarization
optical polarization
photoelasticity
zodiacal light

polarized radiation
GS polarized radiation
. polarized elastic waves
. polarized electromagnetic radiation
. . polarized light
. . synchrotron radiation
RT caustics (optics)
elastic waves
electromagnetic radiation
extraterrestrial radiation
linear polarization
plasma radiation
∞ polarization
polarization characteristics
∞ radiation
∞ rays

polarizers
DEF Devices for polarizing radiant energy.
RT Kerr cells
light (visible radiation)
optical polarization
polarimeters
polariscopes

polarization (waves)
polarized electromagnetic radiation

polarographs
USE polarography

polarography
UF *polarographs*
GS electrical measurement
. polarography
RT chemical analysis
optical polarization
polarimeters
quantitative analysis

polarons
GS elementary excitations
. polarons
particles
. charged particles
.. energetic particles
... electrons
.... polarons
. corpuscular radiation
.. energetic particles
... electrons
.... polarons
. elementary particles
.. fermions
... leptons
.... electrons
..... polarons
RT conduction bands
cross polarization
electron phonon interactions
ionic crystals
phonons
plasmons
polarization (waves)

∞ poles
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ dipoles
magnetic dipoles
magnetic poles
monopoles
poles (supports)
Regge poles

poles (supports)
RT electric power transmission
∞ poles

police
GS personnel
. police
RT communities
crime
regulations
security
social factors
violence

policies
GS policies
. energy policy
. foreign policy
.. international relations
... international cooperation
.... outer space treaty
. patent policy
. procurement policy
RT copyrights
governments
licensing
prohibition
regulations
rules

poliomyelitis
GS diseases
. infectious diseases
.. viral diseases
... poliomyelitis

Polish TS–11 aircraft
USE TS–11 aircraft

polished metals
USE metal polishing

polishing
GS polishing
. metal polishing
.. electropolishing
. vibratory polishing
RT abrasion
cleaning
finishes
grinding (material removal)
metallography
smoothing
surface finishing
ultrasonic cleaning

politics
RT air law
communities
culture (social sciences)
governments
international cooperation
international law
law (jurisprudence)
nations
regimes
sociology
sovereignty
United Nations
voting
warfare

pollen
GS particles
. pollen
RT aerobiology
air pollution
dust
plants (botany)

pollutants
USE contaminants

pollution
GS pollution
. environment pollution
.. air pollution
... global air pollution
... indoor air pollution
.. soil pollution
.. water pollution
... oil pollution
. noise pollution
. thermal pollution
RT clean fuels
contaminants
contamination
debris
decontamination
dissipation
elimination
endangered species
energy policy
environment effects
environment protection
environmental quality
environmental surveys
human wastes
metabolic wastes
Microcystis
microorganisms
nonpoint sources
oil slicks
poisons
prevention
public health
purity
quality
radioactive wastes
smoke abatement
solid wastes
toxicology
waste disposal
wastes
water
water reclamation
water treatment

pollution control
GS environmental control
. pollution control
RT air quality
biochemical oxygen demand
∞ control
dewatering
environmental surveys
flue gases
fly ash
particulates

pollution monitoring
RT air pollution
air quality
ambience
environment pollution
global air pollution
ground stations
in situ measurement
monitors
particulates
soil pollution
warning systems
water pollution

pollution transport
DEF Dispersing or diffusion of atmospheric or water pollutants. Used for atmospheric loading.
UF atmospheric loading
RT aerosols
air pollution
atmospheric circulation
atmospheric diffusion
combustion products
dispersing
environment pollution
exhaust emission
exhaust gases
gas transport
gaseous diffusion
global air pollution
plumes
thermal pollution
trace contaminants
transport properties
transport theory
water circulation
water pollution

poloidal flux
DEF Plasma confinement concept with multipole magnetic fields.
RT magnetic field configurations
tokamak devices
toroidal plasmas

polonium
GS chemical elements
. metalloids
. . polonium
. . . polonium isotopes
. . . . polonium 208
. . . . polonium 209
. . . . polonium 210
RT metals

polonium 208
GS chemical elements
. metalloids
. . polonium
. . . polonium isotopes
. . . . polonium 208
. nuclides
. . isotopes
. . . polonium isotopes
. . . . polonium 208
. . . radioactive isotopes
. . . . polonium 208
RT metals

polonium 209
GS chemical elements
. metalloids
. . polonium
. . . polonium isotopes
. . . . polonium 209
. nuclides
. . isotopes
. . . polonium isotopes
. . . . polonium 209
. . . radioactive isotopes
. . . . polonium 209
RT metals

polonium 210
GS chemical elements
. metalloids
. . polonium
. . . polonium isotopes
. . . . polonium 210
. nuclides
. . isotopes
. . . polonium isotopes
. . . . polonium 210
. . . radioactive isotopes
. . . . polonium 210
RT metals

polonium compounds
RT oo chemical compounds
Group 6A compounds

polonium isotopes
GS chemical elements
. metalloids
. . polonium
. . . polonium isotopes
. . . . polonium 208
. . . . polonium 209
. . . . polonium 210
. nuclides
. . isotopes
. . . polonium isotopes
. . . . polonium 208
. . . . polonium 209
. . . . polonium 210
RT metals

polyacetylene
DEF An aliphatic organic polymer that has high semiconductor properties which can be enhanced by doping.
RT conducting polymers
semiconductors (materials)

polyacrylates
USE acrylic resins

polyacrylonitrile
(added January 1990)
UF *PAN (polyacrylonitrile)*
GS nitriles
. acrylonitriles
. . polyacrylonitrile
RT acrylic resins
carbon fibers
oo polymers
synthetic fibers

polyamide resins
UF *nylon resins*
GS plastics
. synthetic resins
. . thermosetting resins
. . . furan resins
. . . . polyamide resins
. . . . . Kevlar (trademark)
. . . . . Nylon (trademark)
resins
. synthetic resins
. . thermosetting resins
. . . furan resins
. . . . polyamide resins
. . . . . Kevlar (trademark)
. . . . . Nylon (trademark)
RT aramid fiber composites
aramid fibers

polyatomic gases
GS gases
. molecular gases
. . polyatomic gases
. . . diatomic gases

polyatomic molecules
GS molecules
. polyatomic molecules
. . diatomic molecules
. . triatomic molecules
RT atoms
buckminsterfullerene
chemical bonds
oo chemical compounds
fullerenes
ions
molecular structure
molecular weight
positive ions

polybenzimidazole
RT synthetic fibers

polyblends
USE polymer blends

polybrominated biphenyls
DEF A group of 209 chemicals whose toxicity varies and includes principally one fire retardant called firemaster. Used for PBB.
UF *PBB*
GS phenyls
. polybrominated biphenyls
toxins and antitoxins
. polybrominated biphenyls
RT bromine compounds
flame retardants
polychlorinated biphenyls

polybutadiene
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . dienes
. . . . polybutadiene
plastics
. polybutadiene
RT addition resins
block copolymers
butadiene
HTPB propellants
synthetic rubbers

polybutadiene tetranitramine
GS nitrogen compounds
. nitro compounds
. . polybutadiene tetranitramine
RT plastic propellants

polycarbonates
GS carbon compounds
. carbonates
. . polycarbonates
. . . Lexan (trademark)
esters
. polycarbonates
. . Lexan (trademark)
RT polycarbosilanes
oo polymers

polycarbosilanes
(added July 1991)
RT ceramic fibers
organometallic polymers
polycarbonates
polysilanes
silanes
silicon carbides
silicon polymers

polychlorinated biphenyls
UF *PCB*
GS phenyls
. polychlorinated biphenyls
RT polybrominated biphenyls

polycrystals
GS crystals
. polycrystals
RT bicrystals
crystal structure
single crystals

polycyclic aromatic hydrocarbons
(added November 1994)
UF *PAH*
GS organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . polycyclic aromatic hydrocarbons
. hydrocarbons
. . cyclic hydrocarbons
. . . polycyclic aromatic hydrocarbons
RT oo aromatic compounds
combustion products
cosmic dust
diffuse interstellar bands
interstellar matter

polycythemia
RT hemoglobin
hemolysis
hemorrhages
spleen

polyester resins
GS plastics
. synthetic resins
. . polyester resins
resins

. synthetic resins
. . polyester resins
RT Dacron (trademark)
thermosetting resins

polyesters
DEF Polymers in which the repeated structural unit in the chain is of the ester type.
GS esters
. polyesters
RT ∞ polymers
synthetic fibers

polyether resins
GS plastics
. synthetic resins
. . polyether resins
. . . PEEK
. . . polymethyl methacrylate resins
. synthetic resins
. . polyether resins
. . . PEEK
. . . polymethyl methacrylate
RT vulcanized elastomers

polyetheretherketones
USE PEEK

polyethylene terephthalate
GS esters
. polyethylene terephthalate
plastics
. polyethylenes
. . polyethylene terephthalate
terephthalates
. polyethylene terephthalate
RT addition resins
Mylar (trademark)
∞ polymers

polyethylenes
GS plastics
. polyethylenes
. . polyethylene terephthalate
RT addition resins
ethylene
synthetic resins
thermoplastic resins

polygonization
RT crystal defects
crystal growth
recrystallization

polygons
GS geometry
. Euclidean geometry
. . polygons
. . . hexagons
. . . tetragons
. . . . parallelograms
. . . . . rhomboids
. . . . rectangles
. . . . squares (mathematics)
. . . . trapezoids
. . . triangles
RT polytopes

polyhedrons
GS geometry
. Euclidean geometry
. . polyhedrons
. . . cubes (mathematics)
. . . icosahedrons
. . . octahedrons
. . . parallelepipeds
. . . pyramids
. . . rhombohedrons
. . . tetrahedrons
RT buckminsterfullerene
fullerenes
polytopes

polyimide resins
GS resins
. polyimide resins
RT bismaleimide
polyimides
resin matrix composites

polyimides
GS nitrogen compounds
. amides
. . polyimides
. . . bismaleimide
. . . Kapton (trademark)
RT polyimide resins

polyisobutylene
GS plastics
. polyisobutylene
RT addition resins
synthetic rubbers

polyisoprenes
RT ∞ polymers
rubber
synthetic rubbers

polymer alloys
USE polymer blends

polymer blends
(added November 1992)
UF *polyblends*
polymer alloys
GS mixtures
. polymer blends
RT copolymers
polymer physics
∞ polymers
thermoplastic resins

polymer chemistry
RT biopolymer denaturation
∞ chemistry
glass transition temperature
oligomers
phosphazene
polymer physics
∞ polymers
polyester

polymer matrix composites
DEF Materials consisting of reinforcing fibers, filaments, and/or whiskers embedded in polymeric bonding matrices for increased mechanical and physical properties.
GS composite materials
. polymer matrix composites
. . epoxy matrix composites
. . . boron–epoxy composites
. . . graphite–epoxy composites
. . graphite–polyimide composites
. . reinforced plastics
. . . carbon fiber reinforced plastics
. . . . carbon–phenolic composites
. . . glass fiber reinforced plastics
. . . micarta
RT aramid fiber composites
bismaleimide
boron fibers
∞ construction materials
fiber composites
hybrid composites
laminates
∞ materials
∞ matrices
matrix materials
PEEK
∞ polymers
pultrusion
resin film infusion
resin matrix composites
resin transfer molding
sheet molding compounds

polymer physics
RT glass transition temperature
∞ physics
polymer blends
polymer chemistry
∞ polymers
polyester
∞ science

polymeric films
UF *plastic films*
GS polymeric films
. Kapton (trademark)
. Mylar (trademark)
RT casting
conducting polymers
fibers
∞ films
Langmuir–Blodgett films
Nylon (trademark)
photographic film
plastic coatings
polypyrroles
∞ sheets

polymerization
DEF A chemical reaction in which the molecules of monomers are linked together to form polymers.
GS synthesis (chemistry)
. polymerization
. . copolymerization
. . dimerization
RT chemical reactions
coupled modes
depolymerization
oligomers
quinoxalines
refining
∞ coating
Ziegler catalyst

∞ polymers
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT biopolymers
block copolymers
catapiene
conducting polymers
coordination polymers
copolymerization
copolymers
elastomers
ferroelectric materials
fluoropolymers
formica
glycidyl azide polymer
high polymers
Kapton (trademark)
KEL-F
Lexan (trademark)
lignin
macromolecules
methyl polysiloxanes
micarta

monomers
Mylar (trademark)
nitrogen polymers
Nylon (trademark)
oligomers
organic materials
organometallic polymers
oxetane polymers
phosphorus polymers
photopolymers
plastics
polyacrylonitrile
polycarbonates
polyesters
polyethylene terephthalate
polyisoprenes
polymer blends
polymer chemistry
polymer matrix composites
polymer physics
polyquinoxalines
polysilanes
polysiloxanes
polytetrafluoroethylene
polyurethane foam
polyvinyl fluoride
prepolymers
Pyrrones (trademark)
silicon polymers
silicones
siloxanes
solithane
styrofoam (trademark)
synthetic resins
teflon (trademark)
vinyl copolymers
vinyl polymers

polymethyl methacrylate
UF *lucite (trademark)*
plexiglass (trademark)
GS plastics
. synthetic resins
. . polyether resins
. . . polymethyl methacrylate resins
. synthetic resins
. . polyether resins
. . . polymethyl methacrylate

polymorphism
GS morphology
. polymorphism
RT allotropy
crystal lattices
crystal structure
∞ physical properties

polynomials
GS algebra
. polynomials
. . binomials
. . dyadics
. . Hermitian polynomial
RT coefficients
cubic equations
eigenvalues
eigenvectors
∞ equations
linear equations
nonlinear equations
quadratic equations
roots of equations
shape functions

polynuclear organic compounds
DEF Hydrocarbon molecules with two or more nuclei and with or without oxygen, nitrogen, or other elements.
GS organic compounds
. polynuclear organic compounds
RT air pollution
∞ chemical compounds
petroleum products
purification

polynucleotides
DEF Linear sequences of esters of nucleotides and phosphoric acid.
GS organic compounds
. nucleotides
. . polynucleotides
phosphorus compounds
. phosphates
. . polynucleotides
RT biopolymers
proteins
ribonucleic acids

polyorganosiloxanes
USE polysiloxanes

Polyot satellites
GS artificial satellites
. Polyot satellites

polypeptides
DEF In organic chemistry, chains of amino acids linked by peptide bonds but with lower molecular weights than proteins; obtained by synthesis or by partial hydrolysis of proteins.
GS organic compounds
. peptides
. . polypeptides
. . . glutathione
. . . hypertensin
RT amino acids
biopolymers
proteins

polyphenyl ether
GS ethers
. polyphenyl ether

polyphenyls
GS phenyls
. polyphenyls
. . tetraphenyls
. . triphenyls

polypropylene
GS plastics
. polypropylene
RT addition resins
synthetic resins

polypyrroles
(added August 1994)
UF *PPY*
RT conducting polymers
electrode materials
polymeric films
pyrroles

polyquinoxalines
RT ∞ chemical compounds
∞ polymers

polysaccharides
GS organic compounds
. carbohydrates
. . polysaccharides
. . . cellulose
. . . . Fortisan (trademark)
. . . chitin
. . . dextrans
. . . glycogens
. . . starches
RT gums (substances)

polysilanes
(added July 1991)
UF *oxsilanes*
RT organometallic polymers
polycarbosilanes
∞ polymers
silanes

polysiloxanes
(added July 1991)
UF *polyorganosiloxanes*
GS polysiloxanes
. methyl polysiloxanes
RT ∞ polymers
silicon compounds
siloxanes

polyslips
RT ∞ slip

polystation doppler tracking system
GS networks
. tracking networks
. . polystation doppler tracking system
stations
. ground stations
. . polystation doppler tracking system
. tracking stations
. . polystation doppler tracking system
tracking (position)
. polystation doppler tracking system
RT Doppler radar
missile tracking
pulse radar
radar networks
satellite doppler positioning
space detection and tracking system
spacecraft tracking
∞ systems

polystyrene
GS plastics
. polystyrene
. . styrofoam (trademark)
styrenes
. polystyrene
. . styrofoam (trademark)
RT addition resins
block copolymers
Santowax (trademark)
synthetic resins
thermoplastic resins

polysulfides
GS chalcogenides
. sulfides
. . inorganic sulfides
. . . polysulfides
sulfur compounds
. sulfides
. . inorganic sulfides
. . . polysulfides
RT composite propellants

polytetrafluoroethylene
GS halogen compounds
. fluorine compounds
. . fluoro compounds

. . . difluoro compounds
. . . . . polytetrafluoroethylene
. . . . . teflon (trademark)
. . . fluorine organic compounds
. . . . fluorohydrocarbons
. . . . . polytetrafluoroethylene
. . . . . teflon (trademark)
. . . . fluoropolymers
. . . . . polytetrafluoroethylene
. . . . . teflon (trademark)
organic compounds
. fluorine organic compounds
. . fluorohydrocarbons
. . . polytetrafluoroethylene
. . . . teflon (trademark)
. . fluoropolymers
. . . polytetrafluoroethylene
. . . . teflon (trademark)
. hydrocarbons
. . fluorohydrocarbons
. . . polytetrafluoroethylene
. . . . teflon (trademark)
plastics
. polytetrafluoroethylene
. . teflon (trademark)
RT ∞ polymers
synthetic resins

polytopes
RT analytic geometry
Euclidean geometry
hyperplanes
polygons
polyhedrons

polytropic processes
RT adiabatic conditions
∞ isobars
thermodynamics

polyurethane foam
RT foams
low density materials
∞ polymers
soils
sponges (materials)

polyurethane resins
GS resins
. polyurethane resins
RT composite propellants

polyvinyl alcohol
GS hydroxyl compounds
. alcohols
. . polyvinyl alcohol
plastics
. polyvinyl alcohol
RT addition resins
synthetic resins
vinyl polymers

polyvinyl chloride
UF *Geon (trademark)*
GS plastics
. polyvinyl chloride
vinyl polymers
. polyvinyl chloride
RT addition resins
chlorides
synthetic resins
tetrahydrofuran

polyvinyl fluoride
DEF DuPont's Tedlar, unplasticized PVF films with outstanding resistance to ultraviolet radiation. Used for Tedlar (trademark).
UF *Tedlar (trademark)*
GS halogen compounds
. fluorine compounds
. . fluorides
. . . polyvinyl fluoride
. . fluoro compounds
. . . fluorine organic compounds
. . . . fluoropolymers
. . . . . polyvinyl fluoride
. halides
. . fluorides
. . . polyvinyl fluoride
organic compounds
. fluorine organic compounds
. . fluoropolymers
. . . polyvinyl fluoride
plastics
. polyvinyl fluoride
vinyl polymers
. polyvinyl fluoride
RT ∞ polymers

polywater
GS water
. polywater
RT atomic structure
chemical bonds
molecular structure
polymer chemistry
polymer physics

Pomeranchuk theorem
GS theorems
. Pomeranchuk theorem
RT antiparticles
deuterons
diffraction patterns
eikonal equation
elastic scattering
electrons
elementary particles
field theory (physics)
Fredholm equations
Glauber theory
high energy interactions
kaons
mesons
nucleon-nucleon scattering
pomerons
Regge poles
scattering cross sections

pomerons
RT nuclear reactions
Pomeranchuk theorem
proton-proton reactions
Regge poles
scattering
scattering cross sections

ponderomotive forces
GS electromotive forces
. ponderomotive forces
RT electrodynamics
∞ force
Lorentz force
relativistic plasmas
relativity

ponds
DEF Natural bodies of standing fresh water occupying small surface depressions, usually smaller than lakes and larger than pools.
RT aquifers
Great Salt Lake (UT)
irrigation
lagoons
lakes
limnology
liquid wastes
reservoirs
solar ponds (heat storage)
surface water
waste disposal
water resources
watersheds
windpowered pumps

Pontiac (MI)
GS cities
. Pontiac (MI)
RT Michigan

pontryagin principle
RT calculus of variations
maximum principle
optimization
reaction time

population inversion
GS inversions
. population inversion
RT electron pumping
energy levels
molecular relaxation
nitrogen lasers
nuclear pumping
populations
stimulated emission

population theory
RT populations
probability theory
∞ theories

populations
RT biomass
discriminant analysis (statistics)
geographic distribution
population inversion
population theory
predators
∞ statistics

porcelain
GS ceramics
. porcelain
refractory materials
. porcelain
RT ceramic coatings
enamels
glass
glazes
silicon dioxide
vitreous materials
vitrification

pores
USE porosity

porosity
DEF The volume fraction of voids contained in a solid, often expressed as a percent.
UF *pores*
GS porosity
. microporosity
RT aquifers
buoyancy
compressibility
defects
∞ density
density (mass/volume)
formations

gas injection
hole distribution (mechanics)
hygral properties
impregnating
infiltration
interstices
leakage
moisture resistance
permeability
permeating
pinholes
porous boundary layer control
porous materials
porous plates
porous silicon
∞ properties
sintering
textures
void ratio
voids
wettability

porous airfoils
USE porous boundary layer control

porous boundary layer control
UF *porous airfoils*
GS boundary layer control
. porous boundary layer control
RT ∞ control
convective flow
Ekman layer
free convection
holes (mechanics)
mass transfer
perforated plates
porosity
wings

porous materials
GS porous materials
. porous silicon
RT aerogels
brittle materials
∞ cells
honeycomb structures
interstices
low density materials
∞ materials
metal powder
porosity
powder metallurgy
sands
soils
sponges (materials)
xerogels

porous plates
GS structural members
. plates (structural members)
. . porous plates
RT low density materials
porosity

porous silicon
(added September 1995)
GS chemical elements
. metalloids
. . silicon
. . . porous silicon
porous materials
. porous silicon
RT cathodoluminescence
conduction bands
electroluminescence
light sources
photoluminescence
porosity

porous walls
GS walls
. porous walls
RT ∞ diffusers

porphines
GS organometallic compounds
. porphines
RT chlorophylls
hemoglobin

porphyra
GS plants (botany)
. algae
. . porphyra

porphyrins
GS porphyrins
. chlorophylls
RT hemoglobin

porpoises
GS animals
. vertebrates
. . mammals
. . . marine mammals
. . . . porpoises

portable equipment
RT ∞ equipment
kidscopes
logistics
mobility
stowage (onboard equipment)

portable life support systems
UF *PLSS*
GS support systems
. life support systems
. . portable life support systems
. . . AEPS
. . . IMLSS
RT argon–oxygen atmospheres
biopaks
breathing apparatus
emergency life sustaining systems
helium–oxygen atmospheres
oxygen masks
pressure suits
∞ systems

Portevin-le Chatelier effect
(added August 1997)
DEF A discontinuous yielding in crystalline solids characterized by a serrated or step-like deformation curve.
UF *PLC effect*
RT crystal dislocations
deformation
∞ effects
strain rate
stress–strain diagrams
stress–strain relationships

∞ **ports**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT airports
deepwater terminals
drydocks
harbors
ports (openings)
shipyards
wharves

ports (openings)
GS openings
. ports (openings)
RT apertures
cavities
ducts
exhaust systems
orifices
outlets
∞ ports
vents
∞ windows
windows (apertures)

Portugal
GS nations
. Portugal
. . Azores
RT Europe
Portuguese space program

Portuguese space program
(added August 1990)
GS programs
. space programs
. . European space programs
. . . Portuguese space program
RT Portugal

Poseidon missiles
GS missiles
. ballistic missiles
. . Poseidon missiles
. surface to surface missiles
. . fleet ballistic missiles
. . . Poseidon missiles
RT ballistic missile submarines
guided missile submarines
sea launching

Poseidon satellite
GS artificial satellites
. French satellites
. . Poseidon satellite
RT TOPEX

∞ **position**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT attitude (inclination)
position (location)
position (title)

position (location)
UF *localization*
location
GS position (location)
. solar position
RT altitude
astrolabes
azimuth
bearing (direction)
colliding
collocation
coordinates
detection
distance
ephemerides
exposure
∞ fixing
geometry
latitude
longitude
misalignment
navigation
orbital position estimation
∞ orientation
∞ points
∞ position
position errors

position sensing
positioning
radar beacons
sites
sound ranging
spatial distribution
spherical coordinates
stations
surveys
tracking (position)

position (title)
RT employee relations
evaluation
∞ grade
personnel
∞ position
ratings

position errors
GS errors
. position errors
. . boresight error
RT astrolabes
error signals
navigation
optical correction procedure
orbital position estimation
position (location)
positioning
velocity errors

position indicators
GS display devices
. position indicators
. . plan position indicators
. . radio direction finders
. . spacecraft position indicators
measuring instruments
. indicating instruments
. . position indicators
. . . plan position indicators
. . . radio direction finders
. . . spacecraft position indicators
RT aircraft instruments
altimeters
beacons
distance measuring equipment
flight instruments
Global Positioning System
head-up displays
navigation aids
navigation instruments
plotters
position sensing
range finders
rocket-borne instruments
sextants
solar compasses
sound localization

position sensing
RT computer vision
electro-optics
position (location)
position indicators
robotics

positioning
GS positioning
. satellite doppler positioning
. stationkeeping
RT adjusting
alignment
ambiguity
collating
collocation
displacement
distributing
∞ distribution
exposure
fixing
∞ fixing
Global Positioning System
GLONASS
instrument orientation
∞ joining
latitude measurement
longitude measurement
look angles (electronics)
navigation
∞ orientation
ply orientation
position (location)
position errors
radio navigation
relocation
∞ setting
spacing

positioning devices (machinery)
GS positioning devices (machinery)
. booms (equipment)
. cams
. jigs
RT ∞ devices
holders
jacks (lifts)
∞ machinery
slewing

positive feedback
DEF Feedback which results in increasing the amplification. Used for regenerative feedback.
UF *regenerative feedback*
GS feedback
. positive feedback
RT amplification
feedback amplifiers
multivibrators
nonlinear feedback
oscillators
regeneration (engineering)
self oscillation
transfer functions

positive ions
DEF Group of atoms which has acquired a positive electric charge by the loss of one or more electrons.
GS ions
. positive ions
. . cations
. . . formyl ions
. . . vanadyl radical
. . hydronium ions
RT atoms
hydrogen ions
ion density (concentration)
ionic mobility
ionospheric ion density
magnetospheric ion density
metal ions
molecular ions
monatomic molecules
polyatomic molecules
protons
trivalent ions
valence

positron annihilation
UF *electron-positron annihilation*
GS annihilation reactions
. positron annihilation
RT antiparticles
electron-positron pairs
elementary particles
matter-antimatter propulsion
nuclear particles
pair production
particles

positronium
RT atoms
excitons

positrons
DEF Subatomic particles which are identical to electrons in atomic mass, theoretical rest mass, and energy, but opposite in sign.
GS antimatter
. antiparticles
. . positrons
particles
. charged particles
. . positrons
. elementary particles
. . antiparticles
. . . positrons
. . fermions
. . . leptons
. . . . positrons
. nuclear particles
. . antiparticles
. . . positrons
RT electron-positron pairs
electron-positron plasmas
pair production

post boost propulsion system
RT ascent trajectories
propulsion
propulsion system configurations
rocket engines
spacecraft propulsion
∞ systems
trajectory control

post-blast nuclear radiation
GS nuclear radiation
. post-blast nuclear radiation
RT fallout
half life
radiant flux density
∞ radiation
radiation effects
radioactive decay
radioactivity
Vela satellites

postamplifiers
GS amplifiers
. postamplifiers
RT preamplifiers

posterior sections
RT anatomy
dorsal sections

postflight analysis
RT ∞ analyzing
∞ performance
postmission analysis (spacecraft)

postlaunch reports
DEF Memoranda issued following spacecraft launchings to report launch data, the launch vehicle performance, orbital elements (expected and measured), and current status.
GS documents
. postlaunch reports
reports
. postlaunch reports
RT prelaunch summaries

spacecraft launching
spacecraft performance
summaries

postmission analysis (spacecraft)
DEF A broader term than postflight analysis which deals with the scientific aspects of a mission.
RT flight tests
postflight analysis

postulates
USE axioms

posture
RT human body
orthostatic tolerance
physical fitness

potable liquids
GS liquids
. potable liquids
. . beverages
. . . wines
. . potable water
RT purity

potable water
GS liquids
. potable liquids
. . potable water
water
. potable water
RT cold water
conservation
consumables (spacecrew supplies)
drought
fresh water
ground water
limnology
Modular Integrated Utility System
oases
purification
sanitation
springs (water)
water management
water resources
water tables
water treatment

potassium
GS chemical elements
. alkali metals
. . potassium
. . . liquid potassium
. . . potassium isotopes
. . . . potassium 38
. . . . potassium 39
. . . . potassium 40
metals
. alkali metals
. . potassium
. . . liquid potassium
. . . potassium isotopes
. . . . potassium 38
. . . . potassium 39
. . . . potassium 40
RT electrolyte metabolism
kreep

potassium 38
GS chemical elements
. alkali metals
. . potassium
. . . potassium isotopes
. . . . potassium 38
. nuclides
. . isotopes
. . . potassium isotopes
. . . . potassium 38
. . . radioactive isotopes
. . . . potassium 38
metals
. alkali metals
. . potassium
. . . potassium isotopes
. . . . potassium 38

potassium 39
GS chemical elements
. alkali metals
. . potassium
. . . potassium isotopes
. . . . potassium 39
. nuclides
. . isotopes
. . . potassium isotopes
. . . . potassium 39
metals
. alkali metals
. . potassium
. . . potassium isotopes
. . . . potassium 39

potassium 40
GS chemical elements
. alkali metals
. . potassium
. . . potassium isotopes
. . . . potassium 40
. nuclides
. . isotopes
. . . potassium isotopes
. . . . potassium 40
. . . radioactive isotopes
. . . . potassium 40
metals
. alkali metals
. . potassium
. . . potassium isotopes
. . . . potassium 40

potassium alloys
GS alloys
. potassium alloys

potassium bromides
GS halogen compounds
. bromine compounds
. . bromides
. . . potassium bromides
. halides
. . bromides
. . . potassium bromides
. . metal halides
. . . potassium bromides
potassium compounds
. potassium bromides

potassium chlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . potassium chlorides
. halides
. . chlorides
. . . potassium chlorides
. . metal halides
. . . potassium chlorides
potassium compounds
. potassium chlorides

potassium chromates
GS chromium compounds
. chromates
. . potassium chromates
potassium compounds
. potassium chromates

potassium compounds
GS potassium compounds
. alum
. nepheline
. potassium bromides
. potassium chlorides
. potassium chromates
. potassium hydrides
. potassium hydroxides
. potassium iodides
. potassium nitrates
. potassium oxides
. potassium perchlorates
. potassium peroxides
. potassium phosphates
. potassium silicates
RT ∞ alkali metal compounds
∞ chemical compounds
∞ metal compounds

potassium hydrides
GS hydrogen compounds
. hydrides
. . metal hydrides
. . . potassium hydrides
potassium compounds
. potassium hydrides

potassium hydroxides
GS bases (chemical)
. alkalies
. . potassium hydroxides
hydroxides
. potassium hydroxides
potassium compounds
. potassium hydroxides

potassium iodides
GS halogen compounds
. halides
. . metal halides
. . . alkali halides
. . . . potassium iodides
. iodine compounds
. . iodides
. . . potassium iodides
potassium compounds
. potassium iodides

potassium isotopes
GS chemical elements
. alkali metals
. . potassium
. . . potassium isotopes
. . . . potassium 38
. . . . potassium 39
. . . . potassium 40
. nuclides
. . isotopes
. . . potassium isotopes
. . . . potassium 38
. . . . potassium 39
. . . . potassium 40
metals
. alkali metals
. . potassium
. . . potassium isotopes
. . . . potassium 38
. . . . potassium 39
. . . . potassium 40

potassium nitrates
GS nitrogen compounds
. nitrates
. . inorganic nitrates

. . . potassium nitrates
potassium compounds
. potassium nitrates

potassium oxides
GS chalcogenides
. oxides
. . metal oxides
. . . potassium oxides
potassium compounds
. potassium oxides

potassium perchlorates
GS halogen compounds
. chlorine compounds
. . perchlorates
. . . potassium perchlorates
potassium compounds
. potassium perchlorates
RT explosives
solid rocket propellants

potassium peroxides
GS chalcogenides
. oxides
. . anhydrides
. . . peroxides
. . . . potassium peroxides
potassium compounds
. potassium peroxides

potassium phosphates
GS phosphorus compounds
. phosphates
. . potassium phosphates
potassium compounds
. potassium phosphates

potassium silicates
GS potassium compounds
. potassium silicates
silicon compounds
. silicates
. . potassium silicates
RT minerals

potatoes
GS farm crops
. potatoes
plants (botany)
. potatoes
vegetables
. potatoes
RT ∞ food

∞ **potential**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Coulomb potential
electric potential
geopotential
ionization potentials
Klein–Dunham potential
myoelectric potentials
nucleon potential
open circuit voltage
plasma potentials
potential energy
potential fields
potential theory
Yukawa potential

potential energy
DEF Energy possessed by a body by virtue of its position in a gravity field in contrast with kinetic energy, that possessed by virtue of its motion.
GS potential energy
. electric potential
. . bioelectric potential
. . contact potentials
. . Coulomb potential
. . high voltages
. . Lienard potential
. . low voltage
. . open circuit voltage
. . photovoltages
. . quantum wells
. . . photoexcitation
. . spike potentials
. . threshold voltage
. geopotential height
. ionization potentials
. nuclear potential
. plasma potentials
RT chemical energy
electric energy storage
∞ energy
energy storage
Froude number
geopotential
internal energy
kinetic energy
Lagrangian function
Morse potential
∞ potential

potential fields
RT field theory (physics)
∞ potential

potential flow
UF *irrotational flow*
GS fluid flow
. potential flow
. . equipotentials
RT Cartan space
heat transmission
inviscid flow
vorticity

potential gradients
DEF In general, the local space rate of change of any potential, as the gravitational potential gradient or the velocity potential gradient.
GS gradients
. potential gradients
RT pressure gradients
spark gaps
temperature gradients

potential theory
RT differential equations
Jacobi integral
Lennard–Jones potential
∞ potential
stream functions (fluids)
∞ theories

∞ **potentiometers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Instruments for measuring differences in electric potential by balancing the unknown voltage against a variable known voltage. If the balancing is accomplished automatically, the instrument is called a self-balancing potentiometer. A variable electric resistor.
RT potentiometers (instruments)
potentiometers (resistors)

potentiometers (instruments)
GS measuring instruments
. potentiometers (instruments)
RT bolometers
electric potential
electrical measurement
electrometers
∞ potentiometers
thermocouple pyrometers
thermocouples
voltmeters

potentiometers (resistors)
GS attenuators
. resistors
. . potentiometers (resistors)
RT ∞ potentiometers

potentiometric analysis
UF *potentiometry*
GS chemical tests
. chemical analysis
. . potentiometric analysis

potentiometry
USE **potentiometric analysis**

Potez aircraft
RT ∞ aircraft

Potomac River Valley (MD–VA–WV)
GS valleys
. Potomac River Valley (MD–VA–WV)
RT District of Columbia
§ Maryland
Virginia
West Virginia

potting compounds
RT ∞ compounds
encapsulating
insulation

pouring
RT casting
castings

powder (particles)
DEF An aggregate of discrete particles that are usually within the size range 1 to 1,000 mm.
GS particles
. powder (particles)
. . fines
. . metal powder
. . . platinum black
. . . powdered aluminum
. . . . sintered aluminum powder
RT compressibility
crop dusting
dust
explosives
flakes
flour (food)
granular materials
obsidian
pumice
size separation

powder metallurgy
DEF The art of producing metal powders and of the utilization of metal powders for the production of massive materials and shaped objects.
RT alloying
alloys
autoclaving
cermets
combustion synthesis
comminution
compacting
composite materials
electrodeposition
liquid phase sintering
low density materials

metal matrix composites
metal particles
metal powder
∞ metallurgy
mixed crystals
porous materials
preforms
reaction bonding
sintered aluminum powder
sintering
vacuum melting

powdered aluminum
GS particles
. metal particles
. . metal powder
. . . powdered aluminum
. . . . sintered aluminum powder
. powder (particles)
. . metal powder
. . . powdered aluminum
. . . . sintered aluminum powder
RT aluminum
lithium aluminum hydrides

powdered metals
USE **metal powder**

∞ **power**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT electric generators
fluid power
flux (rate)
flux density
horsepower
resolution
thrust

power amplifiers
GS amplifiers
. power amplifiers
RT amplidynes
cyclotron resonance devices
feedback amplifiers
magnetic amplifiers
parametric amplifiers
push–pull amplifiers
transistor amplifiers
traveling wave amplifiers

power beaming
(added November 1989)
UF *beamed power*
GS power beaming
. laser power beaming
. microwave power beaming
. satellite power transmission
RT energy conversion
laser propulsion
microwave transmission
∞ power transmission
solar power satellites
spacecraft power supplies

power conditioning
UF *power processing systems*
RT ∞ conditioning
electric current
electric generators
electric potential
energy conversion
energy conversion efficiency
output
satellite solar energy conversion
satellite solar power stations

power converters
RT ∞ converters
torque converters

power density (electromagnetic)
USE **radiant flux density**

power efficiency
GS efficiency
. power efficiency
RT combustion efficiency
compressor efficiency
horsepower
nozzle efficiency
power factor controllers
∞ power loss
propeller efficiency
propulsion system performance
propulsive efficiency
thermodynamic efficiency
transmission efficiency

power factor controllers
DEF A solid state electronic device that reduces excess energy waste in AC induction motors by providing only the amount of voltage required to satisfy a given load.
GS controllers
. power factor controllers
RT current regulators
electric motors
energy conservation
energy conversion efficiency
induction motors
power efficiency
voltage regulators

power gain
DEF The ratio of the power that a transducer delivers to a specified load, under specified operating conditions, to the power absorbed by its input circuit. Of an antenna, in a given direction, 4 pi times the ratio of the radiation intensity in that direction to the total power delivered to the antenna.
GS amplification
. power gain
RT CATT devices
high gain
open circuit voltage

power generators
USE **electric generators**

power law bodies
(added May 1995)
GS symmetrical bodies
. axisymmetric bodies
. . power law bodies
. bodies of revolution
. . power law bodies
RT blunt bodies
slender bodies

power limited spacecraft
RT ∞ spacecraft

power limiters
RT attenuators
clamping circuits
clipper circuits
limiter circuits

power lines
GS transmission lines
. power lines
RT bus conductors
∞ cables
coaxial cables
electric power transmission
electric wire
submarine cables
superconducting power transmission
underground transmission lines

∞ **power loss**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT energy dissipation
power efficiency

power modules (STS)
DEF Modules for providing power for payloads for STS and mission dependent equipment.
GS modules
. power modules (STS)
RT orbital maneuvering vehicles
payload delivery (STS)
solar arrays
space transportation system
spacecraft power supplies

∞ **power plants**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cogeneration
electric power plants
engines
Enrico Fermi atomic power plant
geothermal energy utilization
Hallam Nuclear Power Facility
hydroelectric power stations
hydroelectricity
ML–1 nuclear power plant
solar sea power plants
solar thermal electric power plants

power processing systems
USE **power conditioning**

power reactors
RT nuclear power reactors
∞ reactors
saturable reactors

power series
GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . power series
. . . . Taylor series
. . . . . MacLaurin series
. real variables
. . series (mathematics)
. . . power series
. . . . Taylor series
. . . . . MacLaurin series
RT analytic functions
Bessel functions

power spectra
GS spectra
. power spectra
. . cepstra
RT acoustics
cepstral analysis
energy spectra
flux density
loudness
maximum entropy method

∞ **power supplies**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aircraft engines

aircraft power supplies
auxiliary power sources
electric batteries
electric generators
electric power supplies
electron sources
energy requirements
heat sources
lead acid batteries
line current
lithium sulfur batteries
nuclear auxiliary power units
plasma power sources
propellants
rectifiers
solar generators
spacecraft power supplies
voltage converters (AC to AC)
voltage converters (DC to DC)

power supply circuits
GS circuits
. power supply circuits
RT current regulators
rectifiers
transformers
voltage converters (DC to DC)
voltage regulators

∞ power transmission
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bus conductors
electric outlets
electric power transmission
electrical engineering
electrification
hydroelectric power stations
mechanical drives
power beaming
windmills (windpowered machines)

power transmission (lasers)
USE **laser power beaming**

power transmission (microwave)
USE **microwave power beaming**

powered lift aircraft
RT∞ aircraft
externally blown flaps
short takeoff aircraft
STOVL aircraft
vertical takeoff aircraft

powered models
SN (LIMITED TO TEST FACILITIES)
DEF Models that can be tested in complete force equilibrium, including propulsion.
GS models
. wind tunnel models
. . powered models
RT aircraft models
dynamic models

Poynting theorem
GS theorems
. Poynting theorem
RT∞ electric power
electromagnetic radiation
energy transfer
Maxwell equation
vector analysis

Poynting–Robertson effect
DEF The gradual decrease in orbital velocity of a small particle such as a micrometeorite in orbit about the sun due to the absorption and remission of radiant energy by the particle.
RT∞ effects
micrometeoroids
orbital mechanics
radiation effects
zodiacal dust
zodiacal light

PPI (position indicators)
USE **plan position indicators**

PPM (modulation)
USE **pulse position modulation**

PPY
USE **polypyrroles**

practices
USE **procedures**

Praesepe star clusters
GS celestial bodies
. star clusters
. . open clusters
. . . Praesepe star clusters
. stars
. . Praesepe star clusters
RT∞ clusters

praseseonic devices
RT microwave frequencies
piezoelectric transducers
thin films
ultrahigh frequencies

prairies
USE **grasslands**

Prandtl number
DEF A dimensionless number representing the ratio of momentum transport to heat transport in a flow. (After Ludwig Prantl, 1875–1953, German scientist).
GS dimensionless numbers
. Prandtl number
ratios
. Prandtl number
RT forced convection
Grashof number
heat transfer
inviscid flow
momentum transfer
Nusselt number
Peclet number
Reynolds number
Schmidt number
thermodynamic properties
viscous flow

Prandtl–Meyer expansion
GS expansion
. Prandtl–Meyer expansion
RT Blasius equation
Falkner–Skan equation
flow deflection
laminar flow
method of characteristics
Newton pressure law
supersonic flow
two dimensional flow

praseodymium
GS chemical elements
. rare earth elements
. . praseodymium
. . . praseodymium isotopes
metals
. rare earth elements
. . praseodymium
. . . praseodymium isotopes
RT didymium
praseodymium compounds

praseodymium 144
USE **praseodymium isotopes**

praseodymium compounds
(added August 1990)
GS rare earth compounds
. praseodymium compounds
RT∞ chemical compounds
∞ metal compounds
praseodymium

praseodymium isotopes
UF *praseodymium 144*
GS chemical elements
. nuclides
. . isotopes
. . . praseodymium isotopes
. rare earth elements
. . praseodymium
. . . praseodymium isotopes
metals
. rare earth elements
. . praseodymium
. . . praseodymium isotopes

pre-Imbrian period
DEF One of four stratigraphic classifications adopted for displaying (on maps) the geological ages of major features on the moon.
RT lunar composition
lunar craters
lunar evolution
lunar geology
lunar rocks

pre-main sequence stars
DEF Stars in which nuclear reactions that take place in its core have not yet occurred.
GS celestial bodies
. stars
. . protostars
. . . pre-main sequence stars
. . . . T Tauri stars
RT main sequence stars
star formation
stellar evolution

preamplifiers
DEF Amplifiers, the primary function of which is to raise the output of a low level source to an intermediate level so that the signal may be further processed without appreciable degradation in the signal-to-noise ratio. In radar amplifiers separated from the remainder of the receiver and located so as to provide the shortest possible input circuit path from the antenna so as to avoid deterioration of the signal-to-noise ratio. Used for preselectors.
UF *preselectors*
GS amplifiers
. preamplifiers
RT intermediate frequency amplifiers
low noise
mixing circuits
postamplifiers
signal detection
signal detectors
signal reception
transistor amplifiers
voltage amplifiers

prebumers
GS pressure vessels

. preburners
RT pumps
turbine pumps

Precambrian period
RT Baltic Shield (Europe)
Cambrian Period
Canadian Shield
geology
paleontology
Paleozoic Era

precautions
USE accident prevention

precession
DEF Change in the direction of the axis of rotation of a spinning body, as a gyro, when acted upon by a torque.
GS gyration
. precession
. . Larmor precession
. . proton precession
. . quenching (atomic physics)
RT coning motion
Earth orientation
gyroscopes
gyroscopic stability
Larmor radius
libration
muon spin rotation
nutation
polar wandering (geology)
retrograde orbits
rotation
vortex precession

precious metals
USE noble metals

precipitates
SN (EXCLUDES METEOROLOGICAL PRECIPITATES)
RT alloys
grain boundaries
microstructure
precipitation (chemistry)
precipitation hardening
reaction products

∞ **precipitation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERM LISTED BELOW)
RT drop size
electron precipitation
falling
hydrometallurgy
materials recovery
particle precipitation
precipitation (chemistry)
precipitation (meteorology)
proton precipitation

precipitation (chemistry)
DEF The separation of a new phase from solid or liquid solution, usually with changing conditions of temperature or pressure or both.
RT agglomeration
cementation
∞ chemistry
coagulation
colloiding
concentrating
crystallization
deposition
dissolving
filtration
flocculating
hydrometallurgy
materials recovery
Ostwald ripening
precipitates
∞ precipitation
precipitators
∞ saturation
saturation (chemistry)
∞ separation
settling
solubility
supersaturation
unsaturation (chemistry)

precipitation (meteorology)
DEF The precipitation of water from the atmosphere in the form of hail, mist, rain, sleet, and snow. Deposits of dew, fog, and frost are excluded.
GS precipitation (meteorology)
. graupel
. hail
. rain
. . acid rain
. snow
. snow cover
RT Alpine meteorology
anvil clouds
atmospheric moisture
cap clouds
cirrocumulus clouds
cirrostratus clouds
climatology
cloud physics
cloud seeding
clouds (meteorology)
cumulonimbus clouds
cyclones
dew
drainage patterns
drought
flood damage
flood predictions
floods
fog
fog dispersal
hailstorms
humidity
hydrological cycle
hydrology
hydrology models
hydrometeorology
hydrometeors
International Hydrological Decade
meteorological parameters
meteorology
mist
monsoons
nephanalysis
nimbostratus clouds
∞ precipitation
rainmaking
rainstorms
∞ saturation
snowstorms
storm damage
storm enhancement
storm suppression
storms
storms (meteorology)
water
water resources
watersheds
weather
weather forecasting

precipitation hardening
UF *age hardening*
dispersion precipitation hardening
strain aging
GS hardening (materials)
. precipitation hardening
. . maraging
RT cold hardening
eutectic composites
heat treatment
precipitates
solid solutions
strain hardening
supersaturation
time temperature parameter

precipitation particle measurement
GS size determination
. precipitation particle measurement
RT drop size
meteorological radar
particle size distribution
particles

precipitators
GS separators
. precipitators
. . electrostatic precipitators
RT air filters
concentrators
dust collectors
precipitation (chemistry)
thickeners (equipment)

precision
DEF The quality of being exactly or sharply defined or stated. A measure of the precision of a representation is the number of distinguishable alternatives from which it was selected, which is sometimes indicated by the number of significant digits it contains. Used for exactness.
UF exactness
RT accuracy
allowances
confidence limits
consistency
definition
dynamic characteristics
errors
geometric dilution of precision
high resolution
hysteresis
quality
quality control
reliability
resolution
schedules
sensitivity
∞ sharpness
tolerances (mechanics)
truncation errors
validity

precision guided projectiles
DEF Missiles guided by precise laser radiation.
GS missiles
. precision guided projectiles
projectiles
. precision guided projectiles
weapons
. guns (ordnance)
. . artillery
. . . precision guided projectiles
. warheads
. . precision guided projectiles
RT ∞ bombs

terminal ballistics

preconditioning
GS preparation
. preconditioning
RT∞ conditioning

precooling
GS cooling
. precooling
RT regenerative cooling

predators
RT animals
ecology
ecosystems
populations

predicate calculus
(added September 1983)
GS mathematical logic
. predicate calculus
RT artificial intelligence
∞ logic
theorem proving

predicate logic
(added September 1983)
RT artificial intelligence
linguistics
∞ logic
programming languages
semantics

prediction analysis techniques
GS forecasting
. prediction analysis techniques
scheduling
. prediction analysis techniques
RT∞ analyzing
parameter identification
performance prediction
system identification
trend analysis

prediction recording
GS recording
. prediction recording
RT predictions

predictions
UF *predictors*
GS predictions
. flood predictions
. impact prediction
. linear prediction
. noise prediction
. . noise prediction (aircraft)
. performance prediction
. Roshko prediction
RT catastrophe theory
confidence limits
contingency
Delphi method (forecasting)
estimates
forecasting
maximum likelihood estimates
mission planning
pattern method (forecasting)
prediction recording
probe method (forecasting)
profile method (forecasting)
∞ projection
risk
schedules
technological forecasting

predictor-corrector methods
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . predictor-corrector methods
. . iteration
. . . predictor-corrector methods
RT differential equations
iterative solution

predictors
USE predictions

preempting
RT claiming
prevention

prefiring tests
GS engine tests
. prefiring tests
RT captive tests
checkout
ground tests
preflight analysis
prelaunch tests
rocket engine design
space vehicle checkout program
static tests
test firing
test stands
∞ tests

preflight analysis
RT∞ analyzing
prefiring tests
systems analysis
∞ tests
trajectory analysis
weight analysis

preflight operations
GS preflight operations
. aircraft runup
. countdown
RT crew procedures (preflight)
flight operations
ground tests
∞ operations
prelaunch tests
refueling

prefocusing
GS focusing
. prefocusing
RT∞ optics

preforms
RT blanks
composite materials
molds
powder metallurgy
resin film infusion
resin transfer molding

pregnancy
RT birth

preheaters
USE heating equipment

preheating
USE heating

preimpregnation
RT filament winding
pultrusion

prejudices
RT economics
irrationality
management
∞ properties
psychology

prelaunch problems
RT countdown
∞ problems
reliability
spacecraft reliability

prelaunch summaries
DEF Summaries prior to launch of the preparations and parameters of the mission.
GS summaries
. prelaunch summaries
RT mission planning
postlaunch reports
spacecraft launching

prelaunch tests
GS ground tests
. prelaunch tests
. . static firing
RT captive tests
cold flow tests
countdown
crew procedures (preflight)
engine tests
launching
missile tests
prefiring tests
preflight operations
spacecraft maintenance
static tests
test firing
test stands
∞ tests

preloading
USE prestressing

premature operation
RT∞ operations
preparation

premixed flames
GS flames
. premixed flames
RT carburetors
flame propagation
gas mixtures
mixing
premixing
reacting flow
turbulent combustion
turbulent flames

premixing
DEF The mixing of ingredients prior to a specified action (mixing of fuel and air prior to ignition in combustion, for example).
GS mixing
. premixing
RT fuel-air ratio
fuels
gas mixtures
homogenizing
ignition
jet mixing flow
premixed flames
spraying

preparation
GS preparation
. preconditioning
. pretreatment
. . prestressing
. prewhirling
. prewhitening
RT assembling

premature operation
∞ priming

prepolymers
DEF Polymers of degrees of polymerization between that of the monomer or monomers, and the final polymer.
GS prepolymers
. dimers
. trimers
RT monomers
∞ polymers

prepregs
DEF The reinforcing materials containing or combined with the full complement of resin before molding operations in the production of composite materials.
RT composite materials
epoxy resins
functionally gradient materials
laminates
resin matrix composites

preprocessing
RT data processing
data reduction
image processing

presbyopia
RT vision

preselectors
USE preamplifiers

presentation
RT information

preservatives
RT additives
∞ agents
anticoagulants
antioxidants
neutralizers
pensirants
preserving
retardants
stabilizers (agents)

preserving
GS food processing
. preserving
RT biopaks
∞ containers
corrosion prevention
coverings
curing
degradation
dehydrated food
∞ food
freeze drying
freezing
frozen foods
impregnating
irradiation
packaging
preservatives
radiation effects
refrigerating
∞ storage
weatherproofing

Presidential reports
DEF Formal reports originated by the President or his office.
GS documents
. Presidential reports
reports
. Presidential reports
RT congressional reports
papers
records

presintering
USE sintering

presses
GS presses
. rams (presses)
RT compacting
hammers
machine tools
platens
∞ pressing
pressing (forming)
punches
tools

∞ pressing
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cold pressing
compacting
compressing
hot isostatic pressing
hot pressing
platens
presses
pressing (forming)

pressing (forming)
GS forming techniques
. pressing (forming)
. . blanking (cutting)
. . coining
. . hot pressing
. . stamping
. . . hot isostatic pressing
RT cold pressing
compacting
extruding
forging
metal working
molds
presses
∞ pressing
pultrusion
sizing (shaping)
upsetting

pressors
USE vasoconstrictor drugs

pressure
DEF Force or load per unit area. Used for surface pressure.
UF *surface pressure*
GS pressure
. atmospheric pressure
. base pressure
. blood pressure
. . diastolic pressure
. . hypertension
. . hypotension
. . lower body negative pressure
. . systolic pressure
. critical pressure
. densification
. differential pressure
. dynamic pressure
. fluid pressure
. . water pressure
. gas pressure
. geopressure
. high pressure
. inlet pressure
. internal pressure
. intracranial pressure
. intraocular pressure
. isostatic pressure
. low pressure
. . high altitude pressure
. middle ear pressure
. overpressure
. partial pressure
. . oxygen tension
. . . hypoxemia
. plasma pressure
. radiation pressure
. . electron pressure
. . lumens
. . luminous intensity
. . . illuminance
. . . luminance
. . sound pressure
. stagnation pressure
. static pressure
. . hydrostatic pressure
. supercritical pressures
. thrust chamber pressure
. transient pressures
. transition pressure
. vacuum
. . high vacuum
. . low vacuum
. . ultrahigh vacuum
. vapor pressure
. wall pressure
. wind pressure
RT baroreceptors
blast loads
center of pressure
compressing
ear pressure test
elastic waves
environments
∞ force
fuel tank pressurization
Gibbs–Helmholtz equations
head (fluid mechanics)
high pressure oxygen
impact
isobars (pressure)
loads (forces)
Newton pressure law
osmosis
pressure breathing
pressure broadening
pressure chambers
pressure distribution
pressure drag
∞ pressure drop
pressure effects
pressure gages
pressure gradients
pressure heads
pressure ice
pressure measurement
pressure modulator radiometers
pressure oscillations
pressure pulses
pressure ratio
pressure recorders
pressure recovery
pressure reduction
pressure sensors
pressure suits
pressure vessel design
pressure vessels
pressure welding
pressurized cabins
pressurized water reactors

pressurizing
temperature inversions
vacuum chambers
weight (mass)

pressure breathing
DEF The breathing of oxygen or a suitable mixture of gases at a pressure higher than the surrounding pressure.
GS respiration
. pressure breathing
RT emergency breathing techniques
liquid breathing
pressure
stress (physiology)

pressure broadening
RT line spectra
pressure
spectroscopy

pressure cabins
USE pressurized cabins

pressure chambers
GS compartments
. test chambers
. . pressure chambers
. . . hyperbaric chambers
. . . vacuum chambers
RT air locks
∞ chambers
enclosures
pressure
pressurized cabins
wind tunnel drives

pressure dependence
DEF Study of how a rate constant changes with pressure.
RT burning rate
hydrostatic pressure
reaction kinetics

pressure distribution
UF *pressure fields*
GS distribution (property)
. pressure distribution
RT aerodynamic coefficients
aerodynamic loads
aerodynamic stability
center of pressure
differential pressure
∞ distribution
field theory (physics)
influence coefficient
internal pressure
isobars (pressure)
lift
loading moments
loads (forces)
manometers
mass distribution
moment distribution
Newton pressure law
pressure
∞ pressure drop
shock wave profiles
spanwise blowing
static loads
structural design criteria
Theodorsen transformation
thrust distribution
velocity distribution
vertical distribution
wall pressure

pressure drag
GS dynamic characteristics
. drag
. . pressure drag
. . . supersonic drag
. . . wave drag
. . . . interference drag
RT aerodynamic drag
friction drag
pressure

∞ **pressure drop**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT fluid power
friction
gas flow
head flow
inlet flow
pressure
pressure distribution
pressure gradients
pressure oscillations
pressure reduction
two phase flow

pressure effects
RT beta factor
compressibility effects
∞ effects
jet blast effects
loads (forces)
nonisothermal processes
pressure
suction
temperature effects
temperature inversions
transition pressure
vacuum effects
wind effects

pressure fields
USE pressure distribution

pressure gages
UF *bombs (pressure gages)*
GS measuring instruments
. pressure gages
. . barometers
. . manometers
. . osmometers
. . piezoelectric gages
. . piezometers
. . vacuum gages
. . . ionization gages
. . . . alphatrons
. . . . Bayard–Alpert ionization gages
. . . . Penning gages
. . . . Philips ionization gages
. . . Knudsen gages
. . . Mclead gages
. . . Pirani gages
RT ∞ bombs
Bourdon tubes
flowmeters
hypsometers
pressure
shock measuring instruments
strain gage accelerometers
strain gage balances
strain gages
weight indicators

pressure gradients
GS gradients
. pressure gradients
RT atmospheric pressure
bathythermographs
boundary layer thickness
critical flow
differential pressure
fluid boundaries
fluid flow
friction factor
geopressure
hydrodynamics
hydrostatics
inlet pressure
isobars (pressure)
Knudsen flow
liquid flow
liquid–liquid interfaces
liquid–vapor interfaces
multiphase flow
orifice flow
pipe flow
potential gradients
pressure
∞ pressure drop
Rankine–Hugoniot relation
steady flow
steam flow
subcritical flow
suction
supercritical flow
uniform flow
unsteady flow
Venturi tubes

pressure heads
UF *head (pressure)*
GS fluid flow
. head (fluid mechanics)
. . pressure heads
RT center of pressure
elevation
∞ hydraulics
hydrodynamics
hydrostatic pressure
hydrostatics
liquid flow
pressure

pressure ice
UF *pressure ridges*
GS ice
. sea ice
. . pressure ice
RT cold weather
freezing
ice formation
low temperature
ocean currents
pressure
tides
wind (meteorology)
winter

pressure measurement
UF *tonometry*
GS mechanical measurement
. pressure measurement
RT barometers
Bourdon tubes
differential pressure
flow measurement
flowmeters
ionization gages
Knudsen gages
manometers
Mcleod gages
∞ measurement
noise meters
Philips ionization gages

Pirani gages
pitot tubes
pneumatic probes
pressure
vacuum
vacuum gages
velocity
velocity measurement
Venturi tubes
weight indicators
wind tunnel calibration
wind tunnel tests

pressure modulator radiometers
DEF A cell containing a known quantity of a gas is placed in the single optical path of the radiometer and subjected to cyclical pressure changes which alter the absorption lines in the infrared spectrum of the gas. A narrow band signal results from the different voltages at the detector at high and low cell pressures. A wideband signal is generated by physically chopping a percentage of the input beam with a rotating chopper blade.
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . pressure modulator radiometers
RT infrared radiometers
pressure

pressure oscillations
GS oscillations
. pressure oscillations
RT acoustic frequencies
combustion stability
flame propagation
pressure
∞ pressure drop
Southern oscillation
turbulent flow

pressure probes
USE pressure sensors

pressure pulses
GS pulses
. pressure pulses
RT blast loads
flame propagation
pressure
shock waves

pressure ratio
DEF The relationship of a force to the deformation of a system whose deformation varies in some proportion to the force.
GS ratios
. pressure ratio
RT fuel-air ratio
lift drag ratio
mass ratios
payload mass ratio
pressure
propellant mass ratio
stress ratio
thrust-weight ratio

pressure recorders
GS recording instruments
. pressure recorders
RT pressure

pressure recovery
RT ∞ diffusers
explosive decompression
fluid amplifiers
inlet pressure
pressure
∞ recovery

pressure reduction
UF *bleed-off*
decompression
deflating
depressurization
GS pressure reduction
. explosive decompression
RT ∞ bleeding
compressing
gas expansion
inflating
pressure
∞ pressure drop
∞ reduction

pressure regulators
GS control equipment
. regulators
. . automatic control valves
. . . pressure regulators
valves
. automatic control valves
. . pressure regulators
RT controllers
flow regulators
fuel tank pressurization
oxygen regulators
pressurizing
relief valves

pressure ridges
USE pressure ice

pressure sensors
UF *pressure probes*
pressure transducers
GS transducers
. pressure sensors
. . Bourdon tubes
RT electroacoustic waves
piezoelectric gages
pressure
quartz transducers
∞ rakes
shock wave generators
transient pressures
transient response
ultrasonic wave transducers

pressure suits
DEF Garments designed to provide pressure upon the body so that the respiratory and circulatory functions may continue normally, or nearly so, under low pressure conditions, such as occur at high altitudes or in space without benefit of pressurized cabins.
GS clothing
. protective clothing
. . pressure suits
. . . space suits
. . . . extravehicular mobility units
. suits
. . pressure suits
. . . space suits
. . . . extravehicular mobility units
RT flight clothing
helmets
inflatable structures
life support systems
portable life support systems
pressure
safety devices

pressure switches
GS control equipment
. pressure switches
switches
. pressure switches
RT electric switches

pressure transducers
USE pressure sensors

pressure vessel design
GS structural design
. pressure vessel design
RT ∞ design
perforated shells
pressure
shells (structural forms)

pressure vessels
GS pressure vessels
. preburners
RT accumulators
autoclaves
bells
boilers
bulbs
burst tests
∞ containers
domes (structural forms)
fuel tank pressurization
fuel tanks
hemisphere cylinder bodies
isotensoid structures
pressure
propellant tanks
reactor materials
shallow shell equations
spherical tanks
storage tanks
tanks (containers)
∞ vessels
wall pressure
wind tunnel walls

pressure waves
USE elastic waves

pressure welding
GS welding
. pressure welding
. . cold welding
. . diffusion welding
. . explosive welding
. . friction welding
. . ultrasonic welding
RT arc welding
electric welding
flash welding
fusion welding
gas welding
pressure
spot welds

pressurized cabins
UF *pressure cabins*
GS compartments
. pressurized cabins
RT aircraft compartments
cabin atmospheres
∞ cabins
cockpits
emergency life sustaining systems
environmental control
escape capsules
explosive decompression
life support systems
oxygen supply equipment
pressure

pressure chambers
spacecraft cabin atmospheres
spacecraft cabins

pressurized water reactors
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . pressurized water reactors
. . . . spectral shift control reactor
RT nuclear power reactors
pressure

pressurizing
GS pressurizing
. fuel tank pressurization
RT accumulation
densification
expulsion
expulsion bladders
gas generators
gas injection
inflating
pressure
pressure regulators
stimulation

Preston tubes
USE pitot tubes
speed indicators

prestraining
USE prestressing

prestressing
UF *preloading*
prestraining
pretwisting
GS preparation
. pretreatment
. . prestressing
RT elastic deformation
isotensoid structures
stresses
structural strain

pretests
USE tests

pretreatment
GS preparation
. pretreatment
. . prestressing
RT prevention
∞ priming

pretwisting
USE prestressing
twisting

prevaporization
DEF The phase transformations of liquids to gases prior to some physical or chemical reaction.
GS phase transformations
. vaporizing
. . preveporization
RT flashing (vaporizing)
gases
vapor phases
vapors
volatility

prevention
GS prevention
. accident prevention
. corrosion prevention
. fire prevention
. ice prevention
RT blocking
etiology
∞ inhibition
pollution
preempting
pretreatment
protection
∞ reduction
∞ resistance
retarding
sabotage
safety
stopping

prewhirling
GS preparation
. prewhirling

prewhitening
GS preparation
. prewhitening
RT color
∞ treatment

Pribram meteorite
GS celestial bodies
. meteorites
. . stony meteorites
. . . chondrites
. . . . Pribram meteorite
RT bolides
meteor trails

primary batteries
SN (NON-RECHARGEABLE BATTERIES)
GS electric generators
. direct power generators
. . primary batteries
. . . alkaline batteries
. . . dry cells
. . . . magnesium cells
. . . . nickel zinc batteries
. . . metal air batteries
. . . . zinc-oxygen batteries
. . . sodium sulfur batteries
. . . thermal batteries
electrochemical cells
. electric batteries
. . primary batteries
. . . alkaline batteries
. . . dry cells
. . . . magnesium cells
. . . . nickel zinc batteries
. . . metal air batteries
. . . . zinc-oxygen batteries
. . . sodium sulfur batteries
. . . thermal batteries
RT charge efficiency
electrolytes
nonaqueous electrolytes
storage batteries
wet cells

primary cosmic rays
UF *heavy cosmic ray primaries*
GS extraterrestrial radiation
. primary cosmic rays
. . solar cosmic rays
ionizing radiation
. cosmic rays
. . primary cosmic rays
. . . solar cosmic rays
particles
. corpuscular radiation
. . primary cosmic rays
. . . solar cosmic rays
RT cosmic ray albedo
heavy nuclei
secondary cosmic rays

primates
GS animals
. vertebrates
. . mammals
. . . primates
. . . . apes
. . . . . chimpanzees
. . . . baboons
. . . . human beings
. . . . monkeys

∞ primers
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT engine primers
primers (coatings)
primers (explosives)

primers (coatings)
DEF Coatings designed to enhance adhesion.
GS coatings
. protective coatings
. . primers (coatings)
RT dopes
fillers
finishes
lacquers
metal coatings
paints
∞ primers
sprayed coatings
substrates
varnishes

primers (explosives)
GS explosive devices
. initiators (explosives)
. . primers (explosives)
igniters
. initiators (explosives)
. . primers (explosives)
RT caps (explosives)
detonation
detonators
exploding wires
percussion
∞ primers
squibs

∞ priming
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT coating
coatings
initiation
preparation
pretreatment
starting

primitive Earth atmosphere
GS Earth atmosphere
. primitive Earth atmosphere
RT ∞ atmospheres
atmospheric composition
atmospheric electricity
atmospheric models
Earth planetary structure
free atmosphere
planetary atmospheres

primitive equations
DEF Eulerian equations of fluid motion in which the primary dependent variables are the fluid's velocity components. The equations govern a wide variety of fluid motions and form the basis of most hydrodynamical analysis.
RT atmospheric boundary layer

climatology
∞ equations
Euler equations of motion
fluid dynamics
∞ mathematics

Prince Edward Island
GS landforms
. islands
. . Prince Edward Island
nations
. Canada
. . Prince Edward Island

Prince William Sound (AK)
GS sounds (topographic features)
. Prince William Sound (AK)
RT Alaska

Princeton sailwings
USE sailwings

principal components analysis
RT image processing
imaging techniques
Karhunen-Loeve expansion
pattern recognition

∞ **principles**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT duality principle
∞ logic
∞ mathematics

printed circuits
GS circuits
. printed circuits
RT breadboard models
circuit boards
electronic packaging
hybrid circuits
integrated circuits
large scale integration
medium scale integration
miniature electronic equipment
miniaturization
photomasks
subminiaturization
thick films
transistor circuits

printed resistors
GS attenuators
. resistors
. . printed resistors
RT miniaturization

printers
GS printers
. printers (data processing)
. teleprinters
RT cathode ray tubes
data processing equipment
plotters
printing
projectors
typewriters

printers (data processing)
GS computer components
. peripheral equipment (computers)
. . printers (data processing)
data processing equipment
. peripheral equipment (computers)
. . printers (data processing)
printers
. printers (data processing)
RT automatic typewriters
computers
∞ data
display devices
printouts
readout
teleprinters

printing
GS printing
. lithography
. . photolithography
RT binding
contrast
document markup languages
electronic publishing
electronography
engraving
inks
legibility
photoengraving
photographic processing
photomechanical effect
plotting
printers
reading
reproduction (copying)
stencil processes

printouts
RT format
lists
output
printers (data processing)
readout
tables (data)

priorities
RT engineering management
project planning
research management
resource allocation
sequencing

Priroda module
(added August 1995)
GS artificial satellites
. space stations
. . Mir space station
. . . Priroda module
manned spacecraft
. Mir space station
. . Priroda module
Soviet spacecraft
. Mir space station
. . Priroda module
stations
. space stations
. . Mir space station
. . . Priroda module
RT International Space Station
radar imagery
remote sensing
space station structures

prismatic bars
GS bars
. prismatic bars
RT prisms

prisms
DEF Transparent bodies with at least two polished plane faces inclined with respect to each other, from which light is reflected or through which light is refracted. When light is refracted by a prism whose refractive index exceeds that of the surrounding medium, it is deviated or bent toward the thicker part of the prism.
GS optical equipment
. prisms
RT photoelasticity
prismatic bars
refraction

privacy
DEF Freedom from observation and/or intrusion. Applies to such things as communications, personal records, photographs.
RT computer information security
information
information dissemination
integrity
papers
recording
records
security

private aircraft
USE general aviation aircraft

probability
USE probability theory

probability density functions
GS functions (mathematics)
. probability density functions
. . normal density functions
. . Pearson distributions
. . Rayleigh distribution
. . Weibull density functions
statistical analysis
. probability density functions
. . normal density functions
. . Pearson distributions
. . Rayleigh distribution
. . Weibull density functions
RT binomial theorem
censored data (mathematics)
continuity (mathematics)
discrete functions
events
expectancy hypothesis
exponential functions
failure analysis
gas density
Mills ratio
quantiles

probability distribution functions
GS functions (mathematics)
. distribution functions
. . probability distribution functions
statistical analysis
. probability distribution functions
statistical distributions
. probability distribution functions
RT discrete functions
. goodness of fit

probability theory
UF *probability*
statistical probability
RT ∞ applications of mathematics
belief networks
binomial theorem
Borel sets
combinatorial analysis
confidence
∞ conjunction
consecutive events
continuums
correlation
decision theory
distribution functions
Duffing differential equation
Einstein equations
ergodic process

error analysis
events
extremum values
forecasting
fuzzy systems
game theory
goodness of fit
∞ indication
infinity
information theory
iteration
Kolmogorov–Smirnov test
likelihood ratio
martingales
∞ mathematics
Maxwell–Boltzmann density function
Minkowski space
Monte Carlo method
operations research
outliers (statistics)
parameter identification
population theory
quality control
random errors
random noise
reliability
sampling
statistical analysis
statistical distributions
∞ statistics
Stieltjes integral
stochastic processes
subgroups
system identification
∞ theories
transition probabilities
traveling salesman problem
uniqueness theorem

probe method (forecasting)
GS forecasting
. technological forecasting
. . probe method (forecasting)
management methods
. probe method (forecasting)
RT Delphi method (forecasting)
estimating
∞ methodology
operations research
pattern method (forecasting)
planning
predictions
profile method (forecasting)
technology assessment

∞ probes
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Galileo probe
gas detectors
measuring instruments
Pioneer 8 space probe
Pioneer 9 space probe
Pioneer 10 space probe
Pioneer 11 space probe
Pioneer Venus 1 spacecraft
Pioneer Venus 2 entry probes
Pioneer Venus 2 night probe
Pioneer Venus 2 spacecraft
Pioneer Venus 2 transporter bus
Pioneer Venus spacecraft
radio probing
remote sensors
sondes
space probes
transducers

problem solving
GS problem solving
. alternating direction implicit methods
. asymptotic methods
. iterative solution
. theorem proving
RT approximation
backward differencing
computational grids
Crank–Nicholson method
decision making
decision support systems
Dining Philosophers Problem
existence theorems
group dynamics
homotropy
Householder transformations
ill-conditioned problems (mathematics)
ill-posed problems (mathematics)
iteration
learning theory
management
maze learning
∞ methodology
Newton methods
simplex method
∞ solution

∞ problems
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Bolza problems
boundary value problems
Cauchy problem
Chapman–Ferraro problem
Dirichlet problem
four body problem
isoperimetric problem
many body problem
Mayer problem
Neumann problem
operational problems
Poincare problem
prelaunch problems
three body problem
tracking problem
traveling salesman problem
two body problem

procedures
DEF Detailed instructions for the performance of a process or function.
UF *methods*
practices
GS procedures
. boundary integral method
. crew procedures (inflight)
. crew procedures (preflight)
. finite element method
. finite volume method
. Glimm method
. optical correction procedure
. panel method (fluid dynamics)
RT procurement policy
systems analysis

proceedings
USE conferences
congressional reports

process control (industry)
DEF The ways and means by which continuous manufacturing and other industrial processes are monitored and maintained to create products of planned, uniform dimension and quality.
RT component reliability
∞ control
product development
quality control
sampling
specifications

process heat
DEF Increase in enthalpy accompanying chemical reactions or phase transformations at constant pressure (heat of crystallization and heat of sublimation are examples).
GS heat
. process heat
RT heat generation

∞ processes
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT autoregressive processes
isentropic processes
jet membrane process
Kraft process (woodpulp)
nonisentropicity
nonisothermal processes
Ornstein–Uhlenbeck process
product development
quality control
sol–gel processes
space industrialization
Umldapp process

∞ processing
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT associative processing (computers)
batch processing
data processing
food processing
image processing
manufacturing
materials recovery
message processing
nuclear fuel reprocessing
optical data processing
photographic processing
production engineering
recycling
refining
retort processing
settling
signal processing
wet spinning

processors (computers)
USE central processing units

procurement
GS procurement
. government procurement
. leasing
RT contracts
equipment specifications
government/industry relations
∞ receiving
services
specifications
subcontracts

procurement management
GS management
. procurement management
RT allocations
budgeting
∞ budgets

commodities
federal budgets
financial management
inventory management
products
services

procurement policy
GS policies
. procurement policy
RT decisions
intellectual property
management
procedures
regulations
rules

product development
UF *engineering development*
GS product development
. weapons development
RT aircraft design
aircraft production
amplifier design
antenna design
breadboard models
commerce
commercialization
computer design
concurrent engineering
consumers
∞ design
∞ development
engine design
functional design specifications
helicopter design
inventions
lens design
management
market research
marketing
patent applications
patent policy
pilot plants
process control (industry)
∞ processes
∞ production
production engineering
quality
quality control
reactor design
reliability
satellite design
solvent refined coal
space industrialization
spacecraft design
standardization
structural design

∞ production
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aircraft production
food production (in space)
fuel production
output
product development
production engineering
production planning
reserves
tools

production costs
DEF The process of fabrication, from raw materials through the finished products, including packaging and other prorated costs.
GS costs
. production costs
. . aircraft production costs
RT cost analysis
cost estimates
design to cost
life cycle costs
operating costs

production engineering
UF *production methods*
GS production engineering
. production planning
RT aircraft production
aircraft production costs
∞ capacity
∞ engineering
human factors engineering
laser applications
management
numerical control
∞ operations
planning
∞ processing
product development
∞ production
productivity
products
scheduling
standardization

production management
GS management
. production management
RT aircraft production costs
employee relations
estimates
fabrication
industrial management
manufacturing
quality control
reliability
resources
safety management
total quality management

production methods
USE **production engineering**

production planning
GS planning
. management planning
. . production planning
production engineering
. production planning
RT ∞ production
schedules

productivity
RT aircraft production costs
allowances
efficiency
matrix management
morale
production engineering
reliability
software reuse
workstations

products
GS products
. fission products
. gross national product
. petroleum products
. . asphalt
. . diesel fuels
. . gasoline
. . tars
. reaction products
. . combustion products
RT by-products
commodities
manufacturing
output
procurement management
production engineering
quality control
resource allocation
services
space industrialization

proficiency
USE **abilities**

profile method (forecasting)
GS forecasting
. technological forecasting
. . profile method (forecasting)
management methods
. profile method (forecasting)
RT Delphi method (forecasting)
estimating
∞ methodology
operations research
planning
predictions
probe method (forecasting)
technology assessment

∞ profiles
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT airfoil profiles
angles (geometry)
curvature
delineation
distribution (property)
geometry
gradients
line shape
planforms
profilometers
search profiles
shapes
shock wave profiles
slopes
streamlining
topography
wind profiles

profilometers
GS measuring instruments
. profilometers
RT ∞ profiles
roughness
shapes
surface properties
surface roughness

progeny
RT children
reproduction (biology)

prognosis
RT diagnosis

Prognoz satellites
GS artificial satellites
. Soviet satellites
. . Prognoz satellites

program evaluation review technique
USE **PERT**

program management
USE **project management**

program reliability (computers)
USE software reliability

program trend line analysis
RT critical path method
management planning
PERT
programs
project management

program verification (computers)
RT checkout
computer programming
file maintenance (computers)
proving
software development tools
software reliability
systems analysis
∞ tests

programmable logic devices
(added September 1992)
RT architecture (computers)
computer systems design
controllers
logic circuits
logic design

programmed instruction
GS education
. programmed instruction
. . computer assisted instruction
RT compilers
computer programming
computer programs

programmers
GS personnel
. programmers
RT coders
computer programming
file maintenance (computers)

∞ **programming**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT computer programming
dynamic programming
file maintenance (computers)
linear programming
mathematical programming
microprogramming
multiprogramming
nonlinear programming
quadratic programming
structured programming

programming (scheduling)
GS programming (scheduling)
. thrust programming
RT critical path method
∞ steps

programming environments
(added January 1993)
UF *SEE (software engineering environments)*
software engineering environments
RT computer programming
computer programs
environments
software development tools
software engineering

programming languages
GS languages
. programming languages
. . ALGOL
. . APL (programming language)
. . Assembly language
. . . autocoders
. . . COMPASS (programming language)
. . . MAP (programming language)
. . BASIC (programming language)
. . Cobol
. . COGO (programming language)
. . context free languages
. . Forth (programming language)
. . FORTRAN
. . HAL/S (language)
. . high level languages
. . . Ada (programming language)
. . . C (programming language)
. . . . C++ (programming language)
. . LISP (programming language)
. . machine oriented languages
. . natural language (computers)
. . Pascal (programming language)
. . PL/1
. . Prolog (programming language)
RT computer programming
predicate logic
structured programming

programs
GS programs
. Army–Navy Instrumentation program
. Comsat program
. defense program
. Downrange Antimissile Measurement Program
. Global Atmospheric Research Program
. . GARP Atlantic Tropical Experiment
. International Geosphere–Biosphere program
. lunar programs
. . Apollo project
. . . Surveyor project
. NASA programs
. . ACEE program
. . Assess program
. . ATLIT project
. . DAST program
. . NASA space programs
. . . Apollo applications program
. . . Apollo project
. . . Bioastronautical Orbital Space System
. . . Centaur project
. . . Earth & Ocean Physics Applications Program
. . . Earth Resources Program
. . . . Earth Resources Survey Program
. . . . . SEASAT program
. . . Echo project
. . . Galileo project
. . . Gemini project
. . . Helios Project
. . . Jupiter project
. . . Magellan project (NASA)
. . . Mariner program
. . . . Mariner Venus–Mercury 1973
. . . . Mariner–Mercury 1973
. . . Mars 69 project
. . . Mars 71 project
. . . Mercury project
. . . National Launch Vehicle Program
. . . NEW MOONS project
. . . Nimbus project
. . . OPEN Project
. . . Pioneer project
. . . Project SETI
. . . Ranger project
. . . . Agena B Ranger Program
. . . Rover project
. . . SAIL project
. . . Saturn project
. . . Scout project
. . . Skylab program
. . . Starprobe mission
. . . Surveyor project
. . . Synchronous Communications Satellite Proj
. . . Taldite project
. . . TIROS project
. . . Titan project
. . . Vanguard project
. . . Viking Mars program
. . . Voyager project
. . Mission to Planet Earth
. . National Aerospace Plane Program
. . quiet engine program
. . supersonic cruise aircraft research
. . TACT program
. . Terminal Configured Vehicle Program
. . Tilt Rotor Research Aircraft Program
. PANT program
. projects
. . Advent Project
. . AgRISTARS project
. . Alouette project
. . Apollo project
. . Apollo Soyuz test project
. . Argus project
. . ASSET project
. . ATLIT project
. . BIOS project
. . Bumblebee project
. . Centaur project
. . Defender project
. . Earth & Ocean Physics Applications Program
. . Echo project
. . eclipse project
. . Experimental Reflector Orbital Shot Proj
. . FIRE (climatology)
. . Galileo project
. . Gemini project
. . Geosat project
. . Harvard Radio Meteor Project
. . Helios Project
. . ISCCP Project
. . Jupiter project
. . Magellan project (NASA)
. . Mars 69 project
. . Mars 71 project
. . Mercury project
. . NEW MOONS project
. . Nike project
. . Nimbus project
. . OPEN Project
. . Pioneer project
. . Project SETI
. . Radio Attenuation Measurement project
. . rand project
. . Ranger project
. . . Agena B Ranger Program
. . Rover project
. . SAIL project
. . Saturn project
. . Scanner project
. . Scout project
. . Seafarer project
. . SQUID project
. . Submarine Integrated Control project

. . Success project
. . Surveyor project
. . Synchronous Communications Satellite Proj
. . Telstar project
. . Themis project
. . TIROS project
. . Titan project
. . Vanguard project
. . Voyager project
. . West Ford project
. radar target scatter site program
. space programs
. . Argentine space program
. . Australian space program
. . Brazilian space program
. . Canadian space program
. . . Alouette project
. . Chinese space program
. . European space programs
. . . Austrian space program
. . . Belgian space program
. . . Czechoslovakian space program
. . . Danish space program
. . . Finnish space program
. . . French space program
. . . German space program
. . . Greek space program
. . . Hungarian space program
. . . Icelandic space program
. . . Italian space program
. . . Luxembourg space program
. . . Netherlands space program
. . . Norwegian space program
. . . Portuguese space program
. . . Russian Space Program
. . . . Proton launch vehicle
. . . Spanish space program
. . . Swedish space program
. . . Swiss space program
. . . Turkish space program
. . . U.S.S.R. space program
. . . UK space program
. . geographic applications program
. . Indian space program
. . Indonesian space program
. . Israeli space program
. . Japanese space program
. . Mexican space program
. . NASA space programs
. . . Apollo applications program
. . . Apollo project
. . . Biostronautical Orbital Space System
. . . Centaur project
. . . Earth & Ocean Physics Applications Program
. . . Earth Resources Program
. . . . Earth Resources Survey Program
. . . . . SEASAT program
. . . Echo project
. . . Galileo project
. . . Gemini project
. . . Helios Project
. . . Jupiter project
. . . Magellan project (NASA)
. . . Mariner program
. . . . Mariner Venus–Mercury 1973
. . . . Mariner–Mercury 1973
. . . Mars 69 project
. . . Mars 71 project
. . . Mercury project
. . . National Launch Vehicle Program
. . . NEW MOONS project
. . . Nimbus project
. . . OPEN Project
. . . Pioneer project
. . . Project SETI
. . . Ranger project
. . . . Agena B Ranger Program
. . . Rover project
. . . SAIL project
. . . Saturn project
. . . Scout project
. . . Skylab program
. . . Starprobe mission
. . . Surveyor project
. . . Synchronous Communications Satellite Proj
. . . Telstar project
. . . TIROS project
. . . Titan project
. . . Vanguard project
. . . Viking Mars program
. . . Voyager project
. . New Zealand space program
. . Pakistan space program
. . Saudi Arabian space program
. Starsite program
. TRAP program
. university program
RT bureaus (organizations)
Committee on Space Research
computer program integrity
computer programs
Earth Resources Information System
investigation
mission planning
∞ missions
∞ operations
program trend line analysis
research and development
∞ research projects
SEASAT 1
SEASAT satellites
SEASAT-B satellite
Solar Maximum Mission
Synchronous Earth Observatory satellite
user manuals (computer programs)

progress
RT economics
management
planning
∞ properties

progressions
GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . progressions
. real variables
. . series (mathematics)
. . . progressions

prohibition
RT legal liability
penalties
policies
regulations

project management
UF *program management*
GS management
. project management
RT commerce
contract management
critical path method
GERT
interfaces
management planning
management systems
mission planning
multidisciplinary research
PERT
program trend line analysis
projects
research and development
∞ research projects
weapon system management

project planning
GS planning
. management planning
. . project planning
RT allocations
budgeting
decisions
estimates
forecasting
goals
management
matrix management
∞ missions
NASA Interactive Planning System
operations research
priorities
projects

Project SETI
DEF A program to search for extraterrestrial intelligence by means of radio communication. Used for Search for Extraterrestrial Intelligence and SETI.
UF *Search for Extraterrestrial Intelligence*
SETI
GS programs
. NASA programs
. . NASA space programs
. . . Project SETI
. projects
. . Project SETI
. space programs
. . NASA space programs
. . . Project SETI
RT extraterrestrial intelligence
radio communication
radio signals

projectile cratering
UF *hypervelocity cratering*
GS cratering
. projectile cratering
RT ejecta
hypervelocity impact
hypervelocity projectiles
meteorite craters
meteoritic damage
meteoroid hazards

projectile penetration
USE terminal ballistics

projectiles
DEF Objects, especially missiles, fired, thrown, launched, or otherwise projected in any manner, such as bullets, guided rocket missiles, sounding rockets, or pilotless airplanes. Originally, objects, such as bullets or artillery shells, projected by applied external forces.
GS projectiles
. hypervelocity projectiles
. precision guided projectiles
. Sabot projectiles
RT ammunition
ballistics
bombs (ordnance)
cartridges
finned bodies
gunfire

guns (ordnance)
incendiary ammunition
nuclear weapons
pyrotechnics
shaped charges
shrapnel
terminal ballistics
terradynamics
warheads
weapons

∞ **projection**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Bonne projection
descriptive geometry
drawings
forecasting
gnomonic projection
graphic arts
illuminating
magnification
predictions
projectors
trends

projective geometry
GS geometry
. Euclidean geometry
. . **projective geometry**
. . . Mercator projection
RT analytic geometry
descriptive geometry
gnomonic projection
reciprocal theorems

projectors
SN (LIGHT AND IMAGE)
RT beacons
illuminating
luminaires
motion pictures
photogrammetry
photographic equipment
photography
printers
∞ projection
searchlights

projects
GS programs
. projects
. . Advent Project
. . AgRISTARS project
. . Alouette project
. . Apollo project
. . Apollo Soyuz test project
. . Argus project
. . ASSET project
. . ATLIT project
. . BIOS project
. . Bumblebee project
. . Centaur project
. . Defender project
. . Earth & Ocean Physics Applications Program
. . Echo project
. . eclipse project
. . Experimental Reflector Orbital Shot Proj
. . FIRE (climatology)
. . Galileo project
. . Gemini project
. . Geosarl project
. . Harvard Radio Meteor Project
. . Helios Project
. . ISCCP Project
. . Jupiter project
. . Magellan project (NASA)
. . Mars 69 project
. . Mars 71 project
. . Mercury project
. . NEW MOONS project
. . Nike project
. . Nimbus project
. . OPEN Project
. . Pioneer project
. . Project SETI
. . Radio Attenuation Measurement project
. . rand project
. . Ranger project
. . . Agena B Ranger Program
. . Rover project
. . SAIL project
. . Saturn project
. . Scanner project
. . Scout project
. . Seafarer project
. . SQUID project
. . Submarine Integrated Control project
. . Success project
. . Surveyor project
. . Synchronous Communications Satellite Proj
. . Telstar project
. . Thamis project
. . TIROS project
. . Titan project
. . Vanguard project
. . Voyager project
. . West Ford project
RT bureaus (organizations)
contracts
estimating
∞ missions
∞ operations
project management
project planning
∞ research projects
tasks
teams

prokaryotes
GS cells (biology)
. prokaryotes
RT bacteria
biological evolution
cytology
eukaryotes
molecular biology

prolate spheroids
DEF Ellipsoids of revolutions, the longer axis of which is the axis of revolution.
GS geometry
. Euclidean geometry
. . analytic geometry
. . . spheroids
. . . . prolate spheroids
RT oblate spheroids

prolateness
RT shapes

Prolog (programming language)
GS languages
. programming languages
. . Prolog (programming language)
RT artificial intelligence
computer programming
expert systems

prolongation
GS extensions
. prolongation
RT time

promethazine
GS amines
. promethazine
drugs
. antihistaminics
. . promethazine
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . promethazine

Prometheus
(added July 1995)
DEF A natural satellite of Saturn, orbiting at a mean distance of 139,350 kilometers.
GS celestial bodies
. natural satellites
. . Saturn satellites
. . . Prometheus
RT Saturn (planet)

promethium
GS chemical elements
. rare earth elements
. . promethium
. . . promethium isotopes
metals
. rare earth elements
. . promethium
. . . promethium isotopes

promethium 146
USE **promethium isotopes**

promethium isotopes
UF *promethium 146*
GS chemical elements
. nuclides
. . isotopes
. . . promethium isotopes
. rare earth elements
. . promethium
. . . promethium isotopes
metals
. rare earth elements
. . promethium
. . . promethium isotopes

prominences
GS prominences
. solar prominences
RT solar activity

promotion
RT display devices
increasing
public relations
upgrading

prone position
RT rest
sitting position
supine position

Prony series
GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . Prony series
. real variables
. . series (mathematics)
. . . Prony series

proofs
USE **proving**

prop-fan technology
DEF Technology of a small diameter, highly loaded, many-bladed variable pitch advanced turboprop.
UF *propfan technology*
RT propeller blades
propeller efficiency
propeller fans
turboprop engines

∞ **propagation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The spreading abroad or sending forward, as of radiant energy. Used for propagators.
UF *propagators*
RT acoustic propagation
attenuation
crack propagation
diffraction propagation
diffusion
electromagnetic radiation
flame propagation
propagation (extension)
self propagation
stress propagation
transequatorial propagation
transmission
wave propagation

propagation (extension)
GS **propagation (extension)**
. crack propagation
. flame propagation
RT ∞ propagation

propagation modes
GS modes
. **propagation modes**
. . whispering gallery modes
RT antipodes
circular waveguides
electromagnetic surface waves
field mode theory
mode transformers
multimode resonators
propagation velocity
shock wave interaction
wave interaction
wave propagation
waveguides

propagation velocity
GS rates (per time)
. **propagation velocity**
velocity
. propagation velocity
RT electromagnetic radiation
group velocity
phase velocity
propagation modes
wave propagation

propagators
USE **propagation**

propane
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . **propane**
RT cyclopropane
hydrocarbon fuels
nitropropane

propargyl groups
DEF Crosslinking agents for certain aromatic polyamides used as matrix resins in fiber composites.
GS organic compounds
. **propargyl groups**
RT ethers
getters
phenyls

∞ **propellant actuated devices**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ejection seats
explosive devices
propellant actuated instruments
rocket engines

propellant actuated instruments
RT actuators
controllers
∞ instruments
measuring instruments
∞ propellant actuated devices

propellant additives
GS additives
. **propellant additives**
. . propellant binders
. . . solid rocket binders
RT anticing additives
antioxidants
catalysts
composite propellants
corrosion prevention
gelled propellants
inhibitors
plasticizers
storable propellants

propellant binders
GS additives
. propellant additives
. . **propellant binders**
. . . solid rocket binders
binders (materials)
. **propellant binders**
. . solid rocket binders
RT composite propellants
glycidyl azide polymer
rocket propellants
solid propellants

propellant casting
GS castings
. **propellant casting**
forming techniques
. casting
. . **propellant casting**

propellant chemistry
RT ∞ chemistry
solid propellant combustion
thermochemistry

propellant combustion
GS combustion
. **propellant combustion**
. . solid propellant combustion
. . . solid propellant ignition
RT axial modes
combustion efficiency
combustion stability
erosive burning
fuel combustion
hydrocarbon combustion
ignition
metal combustion
reacting flow
turbulent combustion
velocity coupling

propellant consumption
(added June 1995)
GS consumption
. **propellant consumption**
RT burning rate
combustion efficiency
fuel consumption
propellant tanks
rocket propellants
solid propellant combustion

propellant decomposition
GS decomposition
. **propellant decomposition**
RT endothermic fuels
fuel corrosion
inhibitors
monopropellants
storable propellants

propellant evaporation
GS phase transformations
. vaporizing
. . evaporation
. . . **propellant evaporation**
RT evaporative cooling
storable propellants

propellant explosions
DEF Detonations of propellants as a result of motor malfunction.
GS explosions
. chemical explosions
. . **propellant explosions**
RT detonation
implosions
rocket engines

propellant grains
RT burning rate
∞ grains
solid propellants
solid rocket propellants

propellant mass ratio
GS ratios
. mass ratios
. . **propellant mass ratio**
RT payload mass ratio
pressure ratio
propulsion system performance
propulsive efficiency
specific impulse
stage separation

propellant oxidizers
USE **rocket oxidizers**

propellant properties
GS **propellant properties**
. propellant sensitivity
. propellant storability
RT chemical properties
elastic properties
mechanical properties
∞ physical properties
∞ properties
thermodynamic properties

propellant sensitivity
GS propellant properties
. **propellant sensitivity**
sensitivity
. propellant sensitivity
RT ignition temperature

impact resistance
shock resistance
spontaneous combustion
storable propellants

propellant sprays
RT fuel injection
fuel sprays
liquid injection
liquid rocket propellants
sprayers

propellant storability
GS propellant properties
. propellant storability
RT fuel corrosion
inhibitors
storable propellants

propellant storage
RT consumables (spacecraft)
expulsion bladders
fuel tank pressurization
fuel tanks
ground support equipment
handling equipment
missile storage
rocket propellants
space storage
storable propellants
∞ storage
underground storage

propellant tanks
UF *rocket propellant tanks*
GS tanks (containers)
. propellant tanks
RT cylindrical tanks
expulsion bladders
external tanks
fluid filled shells
fuel tank pressurization
fuel tanks
liquid filled shells
liquid propellant rocket engines
liquid sloshing
pressure vessels
propellant consumption
spherical tanks
storage tanks
tank geometry
ullage

propellant tests
RT chemical compatibility
cold flow tests
corrosion tests
engine tests
fuel tests
interior ballistics
∞ materials tests
missile tests
propulsive efficiency
stability tests
∞ tests

propellant transfer
GS fluid flow
. fuel flow
. . propellant transfer
materials handling
. propellant transfer
RT fuel control
fuel systems
liquid sloshing
refueling

propellants
DEF Any agents used for consumption or combustion in rockets and from which the rockets derive their thrust, such as fuels, oxidizers, additives, catalysts, or any compounds or mixture of these; specifically, fuels, oxidants, or a combination or mixture of fuels and oxidants used in propelling rockets. Propellants are commonly in either liquid or solid form.
GS propellants
. colloidal propellants
. double base propellants
. . double base rocket propellants
. gelled propellants
. . gelled rocket propellants
. gun propellants
. high energy propellants
. . Domino propellants
. high temperature propellants
. hybrid propellants
. hydrazine nitroform
. hydrogen azides
. nitrasol explosives
. pentolite
. RDX
. rocket propellants
. . gaseous rocket propellants
. . liquid rocket propellants
. . . cryogenic rocket propellants
. . . gelled rocket propellants
. . . hypergolic rocket propellants
. . . monopropellants
. . . . aerozine
. . . RP–1 rocket propellants
. . . slurry propellants
. . . . slush hydrogen
. . nitramine propellants
. . solid rocket propellants
. . . double base rocket propellants
. . . HMX
. . . HTPB propellants
. . . metal propellants
. . TAGN
. . TATB
. solid propellants
. . case bonded propellants
. . composite propellants
. . nitramine propellants
. . plastic propellants
. . solid rocket propellants
. . . double base rocket propellants
. . . HMX
. . . HTPB propellants
. . . metal propellants
. storable propellants
. tetryl
RT ammunition
ascent propulsion systems
auxiliary propulsion
ballistics
burning rate
cartridges
chemical fuels
∞ energy sources
explosives
fuel tanks
fuels
fulminates
guns (ordnance)
incendiary ammunition
oxetane polymers
∞ power supplies
propulsion
spacecraft power supplies
spacecraft propulsion
specific impulse
torpedoes

propeller blades
GS airfoils
. propeller blades
RT blade tips
∞ blades
fan blades
feathering
propellers
prop-fan technology
rotary wings
synchrophasing

propeller drive
GS mechanical drives
. propeller drive
. . helicopter propeller drive
RT contrarotating propellers
marine propulsion
propellers
underwater propulsion

propeller efficiency
GS efficiency
. propulsive efficiency
. . propeller efficiency
RT contrarotating propellers
power efficiency
propellers
prop-fan technology

propeller fans
GS propellers
. propeller fans
RT ducted fans
∞ fans
tilt fans
prop-fan technology

propeller noise
(added July 1989)
GS elastic waves
. sound waves
. . noise (sound)
. . . aerodynamic noise
. . . . propeller noise
. . . aircraft noise
. . . . propeller noise
RT acoustic retrofitting
aeroacoustics
blade slap noise
engine noise
mufflers
noise intensity
noise measurement
noise prediction (aircraft)
noise reduction
sound fields
sound transmission

propeller slipstreams
GS wakes
. aircraft wakes
. . slipstreams
. . . propeller slipstreams
. turbulent wakes
. . slipstreams
. . . propeller slipstreams
RT interference drag

propellers
GS propellers
. contrarotating propellers
. propeller fans
. shrouded propellers
. tilted propellers

. variable pitch propellers
RT actuator disks
feathering
propeller blades
propeller drive
propeller efficiency
ships

∞ properties
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *attributes*
RT acoustic properties
biodegradability
chemical properties
creep properties
dielectric properties
dynamic characteristics
elastic properties
electrical properties
electromagnetic properties
hygral properties
macroscopic equations
magnetic properties
∞ materials science
mechanical properties
optical properties
∞ physical properties
plastic properties
porosity
prejudices
progress
propellant properties
proximity
recoverability
regularity
shear properties
structural properties (geology)
surface properties
tensile properties
thermochemical properties
thermodynamic properties
thermophysical properties
transport properties
turbidity
virtual properties

propfan technology
USE prop–fan technology

prophylaxis
RT diseases
immunology

propionic acid
GS acids
. carboxylic acids
. . fatty acids
. . . propionic acid
organic compounds
. carboxylic acids
. . fatty acids
. . . propionic acid

proportion
RT distributing
ratios

proportional control
DEF Control of an aircraft, rocket or spacecraft in which the control surface deflection is proportional to the movement of the remote controls.
GS automatic control
. proportional control
RT ∞ control
control equipment
feedback control
off–on control
servocontrol

proportional counters
GS ionization chambers
. proportional counters
measuring instruments
. counters
. . radiation counters
. . . proportional counters
. radiation measuring instruments
. . radiation counters
. . . proportional counters
RT dosimeters
Geiger counters
neutron counters

proportional limit
UF *elastic strength*
GS mechanical properties
. elastic properties
. . proportional limit
range (extremes)
. proportional limit
RT critical loading
modulus of elasticity
stress–strain diagrams

proposals
(added February 1992)
GS documents
. proposals
RT contracts
cost analysis
reports
research and development

proprioception
UF *kinesthesis*
GS perception
. sensory perception
. . proprioception
. . . autokinesis
RT kinesthesis

proprioceptors
GS anatomy
. sense organs
. . proprioceptors
receptors (physiology)
. proprioceptors
RT baroreceptors
nervous system
sensitometry

propulsion
GS propulsion
. ascent propulsion systems
. auxiliary propulsion
. chemical propulsion
. . hybrid propulsion
. descent propulsion systems
. electric propulsion
. . electromagnetic propulsion
. . . magnetic sails
. . electrostatic propulsion
. . . ion propulsion
. . laser propulsion
. . plasma propulsion
. . solar electric propulsion
. jet propulsion
. low thrust propulsion
. . electromagnetic propulsion
. . . magnetic sails
. . electrostatic propulsion
. . . ion propulsion
. . man operated propulsion systems
. . photonic propulsion
. . . laser propulsion
. . plasma propulsion
. . solar propulsion
. . . solar electric propulsion
. . . solar thermal propulsion
. marine propulsion
. . underwater propulsion
. . . submarine propulsion
. nuclear propulsion
. . nuclear electric propulsion
. space station propulsion
. spacecraft propulsion
. . electromagnetic propulsion
. . . magnetic sails
. . electrostatic propulsion
. . . ion propulsion
. . matter–antimatter propulsion
. . negative matter propulsion
. . photonic propulsion
. . . laser propulsion
. . plasma propulsion
. . solar propulsion
. . . solar electric propulsion
. . . solar thermal propulsion
RT aeronautical engineering
∞ aircraft
∞ astronautics
∞ drives
engines
exhaust gases
fuel tank pressurization
fuel tanks
high impulse
locomotion
mass drivers
missiles
post boost propulsion system
propellants
propulsive efficiency
pulling
pushing
rocket propellants
solar sails
space flight
Space Shuttle Main Engine
space tugs
thrust

propulsion system configurations
GS propulsion system configurations
. ascent propulsion systems
. descent propulsion systems
RT aerodynamic configurations
aerospike engines
aircraft configurations
auxiliary propulsion
∞ configurations
convertible fan–shaft engines
laser propulsion
launch vehicle configurations
missile configurations
post boost propulsion system
space station propulsion
spacecraft configurations
∞ systems
topping cycle engines

propulsion system performance
RT cold flow tests
combustion efficiency
∞ performance
power efficiency
propellant mass ratio
propulsive efficiency
rocket thrust
solar thermal propulsion

specific impulse
∞ systems
systems health monitoring
thermodynamic efficiency

propulsive efficiency
DEF The efficiency with which energy available for propulsion is converted into thrust by a rocket engine.
GS efficiency
. propulsive efficiency
. . propeller efficiency
RT combustion efficiency
engine tests
laser propulsion
multistage rocket vehicles
nozzle efficiency
power efficiency
propellant mass ratio
propellant tests
propulsion
propulsion system performance
specific impulse
thermodynamic efficiency
thrust programming

propyl compounds
RT∞ chemical compounds

propyl nitrate
GS alkyl compounds
. propyl nitrate
esters
. nitrate esters
. . propyl nitrate
nitrogen compounds
. nitrate esters
. . propyl nitrate

propylene
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . propylene

propylene oxide
GS epoxy compounds
. propylene oxide

prospecting
USE exploration

prostaglandins
GS organic compounds
. lipids
. . steroids
. . . prostaglandins
secretions
. endocrine secretions
. . hormones
. . . prostaglandins
RT biosynthesis
prostate gland

prostate gland
GS anatomy
. genitourinary system
. . reproductive systems
. . . sex glands
. . . . prostate gland
. glands (anatomy)
. . sex glands
. . . prostate gland
RT bladder
prostaglandins

prosthetic devices
GS medical equipment
. prosthetic devices
. . artificial ears
RT walking machines

protactinium
GS chemical elements
. protactinium
. . protactinium isotopes
metals
. protactinium
. . protactinium isotopes

protactinium 234
USE protactinium isotopes

protactinium compounds
GS protactinium compounds
. protactinium fluorides
RT∞ chemical compounds
∞ metal compounds

protactinium fluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . protactinium fluorides
. halides
. . fluorides
. . . metal fluorides
. . . . protactinium fluorides
. . metal halides
. . . metal fluorides
. . . . protactinium fluorides
protactinium compounds
. protactinium fluorides

protactinium isotopes
UF *protactinium 234*
GS chemical elements
. nuclides
. . isotopes
. . . protactinium isotopes
. protactinium
. . protactinium isotopes
metals
. protactinium
. . protactinium isotopes

protease
GS biopolymers
. proteins
. . enzymes
. . . protease
organic compounds
. proteins
. . enzymes
. . . protease

protection
GS protection
. acceleration protection
. circuit protection
. corrosion prevention
. environment protection
. eye protection
. meteoroid protection
. radiation protection
. . radiation shielding
. . . solar radiation shielding
. thermal protection
RT accident prevention
airport security
civil defense
coatings
countermeasures
flying ejection seats
hazards
housings
insulation
prevention
protectors
∞ resistance
safety
safety devices
shielding
warning
warning systems

protective clothing
GS clothing
. protective clothing
. . helmets
. . pressure suits
. . . space suits
. . . . extravehicular mobility units
. . vapor barrier clothing
RT armor
chemical defense
coveralls
emergency life sustaining systems
flight clothing
gloves
goggles
masks
safety devices
shoes

protective coatings
UF *ceramal protective coatings*
sprayed protective coatings
GS coatings
. protective coatings
. . anodic coatings
. . ceramic coatings
. . primers (coatings)
. . refractory coatings
RT alkyd resins
aluminides
anodizing
cladding
∞ construction materials
corrosion
desensitizing
electroplating
encapsulating
finishes
glass coatings
glazes
gold coatings
inorganic coatings
lacquers
metal coatings
nickel coatings
paints
plastic coatings
plating
rubber coatings
sprayed coatings
surface finishing
transgranular corrosion
varnishes
waterproofing
zinc coatings

protectors
GS protectors
. ear protectors
RT bumpers
∞ containers
enclosures
fairings
housings
protection

safety devices
∞ screens
shields
shielding

protein crystal growth
(added March 1989)
GS growth
. crystal growth
. . protein crystal growth
RT protein synthesis
proteins
space processing

protein denaturation
USE biopolymer denaturation

protein metabolism
GS metabolism
. protein metabolism
. . lipid metabolism
RT protein synthesis
synthetic food

protein synthesis
DEF Process by which protein molecules are formed.
RT biological evolution
chemical evolution
protein crystal growth
protein metabolism

proteinoids
GS biopolymers
. proteins
. . proteinoids
organic compounds
. proteins
. . proteinoids

proteins
GS biopolymers
. proteins
. . albumins
. . aspartates
. . calmodulin
. . elastin
. . enzymes
. . . aldolase
. . . amidase
. . . carbonic anhydrase
. . . catalase
. . . cholinesterase
. . . cytochromes
. . . hexokinase
. . . lysozyme
. . . nuclease
. . . oxidase
. . . papain
. . . pepsin
. . . protease
. . . thrombin
. . . trypsin
. . fibrin
. . globulins
. . . fibrinogen
. . . gamma globulin
. . hemoglobin
. . . carboxyhemoglobin
. . . oxyhemoglobin
. . keratins
. . lipoproteins
. . melanin
. . myoglobin
. . proteinoids
. . prothrombin
. . protoproteins
organic compounds
. proteins
. . albumins
. . aspartates
. . calmodulin
. . elastin
. . enzymes
. . . aldolase
. . . amidase
. . . carbonic anhydrase
. . . catalase
. . . cholinesterase
. . . cytochromes
. . . hexokinase
. . . lysozyme
. . . nuclease
. . . oxidase
. . . papain
. . . pepsin
. . . protease
. . . thrombin
. . . trypsin
. . fibrin
. . globulins
. . . fibrinogen
. . . gamma globulin
. . hemoglobin
. . . carboxyhemoglobin
. . . oxyhemoglobin
. . keratins
. . lipoproteins
. . melanin
. . myoglobin
. . proteinoids
. . prothrombin
. . protoproteins
RT adrenocorticotropin (ACTH)
alanine
biopolymer denaturation
collagens
cysteamine
cysteine
∞ food
macromolecules
nucleic acids
nucleotides
∞ nutrients
peptides
polynucleotides
polypeptides
protein crystal growth
protoplasm
serums
synthetic food

Proteus
(added July 1995)
DEF A natural satellite of Neptune, orbiting at a mean distance of 117,600 kilometers.
GS celestial bodies
. natural satellites
. . Neptune satellites
. . . Proteus
RT Neptune (planet)

prothrombin
GS biopolymers
. proteins
. . prothrombin
organic compounds
. proteins
. . prothrombin
RT thrombin

protium
USE light water

protobiology
RT abiogenesis
biological diversity
biological evolution
∞ biology
chemical evolution
paleontology
viruses

protocol (computers)
RT channels (data transmission)
communication networks
computer networks
data links
data processing
data transmission
local area networks
networks
packet switching
World Wide Web

Proton 1 satellite
GS artificial satellites
. Soviet satellites
. . Proton satellites
. . . Proton 1 satellite

Proton 2 satellite
GS artificial satellites
. Soviet satellites
. . Proton satellites
. . . Proton 2 satellite

Proton 3 satellite
GS artificial satellites
. Soviet satellites
. . Proton satellites
. . . Proton 3 satellite

Proton 4 satellite
GS artificial satellites
. Soviet satellites
. . Proton satellites
. . . Proton 4 satellite

proton beams
GS beams (radiation)
. particle beams
. . proton beams
RT neutron beams

proton belts
GS particles
. charged particles
. . magnetically trapped particles
. . . radiation belts
. . . . proton belts
. corpuscular radiation
. . radiation belts
. . . proton belts
. trapped particles
. . magnetically trapped particles
. . . radiation belts
. . . . proton belts
RT ∞ belts
inner radiation belt
outer radiation belt

proton damage
GS damage
. proton damage

proton density (concentration)
GS density (number/volume)
. particle density (concentration)
. . ion density (concentration)
. . . proton density (concentration)
. . . . magnetospheric proton density
RT atmospheric density

atom concentration
plasma density
space density

proton energy
GS particle energy
. proton energy
RT activation energy
electron energy
∞ energy
kinetic energy
surface energy

proton flux density
SN (LIMITED TO PROTON EMISSION OR DETECTION RATE PER UNIT AREA)
GS rates (per time)
. flux density
. . radiant flux density
. . . particle flux density
. . . . proton flux density
RT irradiance
radiancy
radiation counters
solar flux density

proton impact
GS impact
. proton impact
RT electron impact
point impact

proton irradiation
GS irradiation
. ion irradiation
. . proton irradiation
RT deuteron irradiation
electron radiation

Proton launch vehicle
(added April 1985)
GS launch vehicles
. heavy lift launch vehicles
. . Proton launch vehicle
programs
. space programs
. . European space programs
. . . Russian Space Program
. . . . Proton launch vehicle
RT international cooperation
space commercialization

proton magnetic resonance
GS resonance
. magnetic resonance
. . nuclear magnetic resonance
. . . proton magnetic resonance

proton masers
GS stimulated emission devices
. masers
. . proton masers
RT magnetometers

proton precession
GS gyration
. precession
. . proton precession
RT free vibration

proton precipitation
GS particle precipitation
. proton precipitation
RT aurorae
electron precipitation
particles
∞ precipitation
radiation belts
trapped particles
upper atmosphere

proton protuberances
GS protuberances
. proton protuberances

proton resonance
GS resonance
. magnetic resonance
. . nuclear magnetic resonance
. . . proton resonance
RT nuclear particles

Proton satellites
GS artificial satellites
. Soviet satellites
. . Proton satellites
. . . Proton 1 satellite
. . . Proton 2 satellite
. . . Proton 3 satellite
. . . Proton 4 satellite
RT U.S.S.R. space program

proton scattering
GS nuclear reactions
. proton scattering
scattering
. proton scattering
RT ion scattering

proton telescopes
USE particle telescopes

proton–proton reactions
DEF Thermonuclear reactions in which two protons collide at very high velocities and combine to form deuterons. The resultant deuterons may capture other protons to form tritium and the latter may undergo proton capture to form helium. The proton–proton reactions are now believed to be the principal sources of energy within the sun and other stars of its class. A temperature of 5 million degrees Kelvin and high hydrogen (proton) concentrations are required for these reactions to proceed at rates compatible with energy emission by such stars.
GS nuclear reactions
. proton–proton reactions
RT annihilation reactions
∞ interactions
pomerons
thermonuclear reactions

protons
DEF Positively charged subatomic particles having a mass of 1.67252 times 10 to the minus 24 gram, slightly less than that of an electron.
GS particles
. charged particles
. . protons
. . . recoil protons
. . . solar protons
. elementary particles
. . fermions
. . . protons
. . . . recoil protons
. . . . solar protons
RT alpha particles
antiprotons
baryons
cosmic rays
deuterons
flux density
hydrogen ions
ions
nuclear particles
nuclei (nuclear physics)
nucleon potential
nucleons
positive ions
radiation belts
radiation shielding
tritons

protoplanets
DEF Transition objects formed during primeval cloud condensation into stellar systems (stars, planets, etc.) which form the nucleus of planetary accretion. Used for planetesimals.
UF *planetesimals*
GS celestial bodies
. protoplanets
RT cosmology
planetary environments
planetary evolution
planetary mass
planets
solar orbits
solar system
stellar evolution

protoplasm
RT proteins

protoplasts
GS cells (biology)
. protoplasts

protoproteins
GS biopolymers
. proteins
. . protoproteins
organic compounds
. proteins
. . protoproteins
RT amino acids

protostars
GS celestial bodies
. stars
. . protostars
. . . pre-main sequence stars
. . . . T Tauri stars
RT brown dwarf stars
star formation
stellar evolution
stellar mass accretion

prototypes
DEF Preliminary type, form, or instance of systems that serve as models for later stages or for the final, completed version of the systems.
RT breadboard models
∞ patterns
pilot plants

protozoa
GS animals
. protozoa
. . amoeba
. . . palomyxa
. . Flagellata
. . . Euglena
. . . trypanosoma
. . paramecia
microorganisms
. protozoa
. . amoeba
. . . palomyxa
. . Flagellata
. . . Euglena
. . . trypanosoma
. . paramecia
RT microspores
spores

protractors
GS measuring instruments
. protractors
RT angles (geometry)

protuberances
SN (COMPONENTS MOUNTED EXTERNAL TO THE STRUCTURE)
GS protuberances
. proton protuberances
RT aerodynamic configurations
aerodynamic interference
aircraft antennas
aircraft parts
airframes
∞ blisters
cowlings
domes (structural forms)
external store separation
external stores
fairings
fuel tanks
housings
nacelles
papillae
pitot tubes
radomes
∞ ridges
shells (structural forms)
vortex alleviation
wing–fuselage stores
winglets

proustite
GS arsenic compounds
. arsenides
. . proustite
minerals
. proustite

Provider aircraft
USE C–123 aircraft

proving
UF *confirmation*
demonstration
proofs
validation
verification (proving)
GS proving
. theorem proving
RT acceptability
error detection codes
evaluation
examination
mathematical logic
∞ measurement
program verification (computers)
∞ tests

provisioning
RT consumables (spacecrew supplies)
∞ food
life support systems
space rations
stowage (onboard equipment)

proximity
RT distance
∞ properties
tightness

proximity effect (electricity)
DEF Redistribution of current in a conductor caused by the presence of another conductor.
GS electrical properties
. inductance
. . proximity effect (electricity)
electromagnetic properties
. inductance
. . proximity effect (electricity)
RT∞ effects
electricity
superconductors (materials)
volt–ampere characteristics

PRTR (reactor)
USE plutonium recycle test reactor

prussic acid
USE hydrocyanic acid

pseudomonas
GS microorganisms
. bacteria
. . pseudomonas

pseudonoise
RT random noise

pseudopotentials
DEF Factors in an approximate method for calculation of energy bands in solids by the use of approximation which includes the many body effect.
RT impurities
melting
semiconductors (materials)

pseudorandom sequences
RT random numbers
∞ signals

psychiatry
GS medical science
. psychiatry
. . neuropsychiatry
. . social psychiatry
RT brain
military psychology
psychology
psychotherapy

psychoacoustics
GS acoustics
. psychoacoustics
psychology
. psychophysics
. . psychoacoustics
RT auditory perception
auditory signals
bells
bioacoustics
noise intensity
psychological effects
psychological factors

psycholinguistics
DEF Study of linguistic behavior such as conditioning by psychological factors including the speaker's and listener's culturally determined categories of expression and comprehension.
GS linguistics
. psycholinguistics
RT intelligibility
phonemes
phonemics
robots
semantics
syllables
syntax

psychological effects
GS psychological effects
. desynchronization (biology)
. illusions
. . hallucinations
. . moon illusion
. . oculogravic illusions
. . optical illusion
. . . elevator illusion
. jet lag
RT afterimages
aviation psychology
biological effects
boredom
comfort
confidence
disorientation
∞ effects
emotions
environmental engineering
environments
frustration
human factors engineering
human reactions
humidity
military psychology
moods
psychoacoustics
reaction time
space adaptation syndrome
space psychology
stress (biology)
stress (psychology)
Taylor manifest anxiety scale

psychological factors
RT astronaut performance
aviation psychology
emotional factors
flight stress (biology)
habits
moods
permissivity
psychoacoustics
psychosomatics
reward (psychology)
sex factor
space psychology
∞ stimuli
stress (psychology)

psychological indexes
USE psychological tests

psychological sets
GS psychology
. psychological sets

psychological tests
UF *psychological indexes*
GS psychological tests
. Rorschach tests
RT certification
environmental tests
intelligence tests
liman
military psychology
personality tests
pilot selection
psychometrics
ratios
Skinner boxes
Taylor manifest anxiety scale
∞ tests

psychology
DEF The science which studies the functions of the mind, such as sensation, perception, memory, thought, and, more broadly the behavior of an organism in relation to its environment.
GS psychology
. aviation psychology
. cognitive psychology
. military psychology

. psychological sets
. psychophysics
. . psychoacoustics
. space psychology
RT biofeedback
boredom
brain
cybernetics
detachment
diagnosis
disorders
disorientation
emotional factors
emotions
extroversion
frustration
inspiration
intellect
introversion
morale
prejudices
psychiatry
psychometrics
psychotherapy
Rorschach tests
stress (psychology)
subliminal stimuli

psychometrics
RT diagnosis
education
military psychology
norms
personality tests
psychological tests
psychology
psychomotor performance
psychophysics
psychosomatics
Skinner boxes

psychomotor performance
DEF Of or pertaining to muscular action ensuing directly from a mental process, as in the coordinated manipulation of aircraft or spacecraft controls.
GS sensorimotor performance
. psychomotor performance
. . psychosomatics
RT abilities
biocontrol systems
human performance
human reactions
mental performance
operator performance
physiological tests
pilot performance
psychometrics
reaction time
workloads (psychophysiology)

psychopharmacology
DEF The science that deals with the action of drugs on mental function.
GS medical science
. pharmacology
. . psychopharmacology
RT central nervous system
central nervous system depressants
central nervous system stimulants
drugs
life sciences
medical science
∞ medicine
nervous system
psychotropic drugs

psychophysics
GS psychology
. psychophysics
. . psychoacoustics
RT ∞ physics
psychometrics
∞ science

psychophysiology
GS physiology
. psychophysiology
RT evoked response (psychophysiology)
information processing (biology)
∞ science
workloads (psychophysiology)

psychoses
GS psychoses
. psychotic depression
. schizophrenia
RT detachment
disorders
fear
irrationality
neuroses

psychosomatics
GS sensorimotor performance
. psychomotor performance
. . psychosomatics
RT psychological factors
psychometrics

psychotherapy
GS therapy
. psychotherapy
RT convulsions
Gestalt theory
health
mental health
neuropsychiatry
psychiatry
psychology
psychotropic drugs

psychotic depression
GS psychoses
. psychotic depression
RT ∞ depression
neurotic depression

psychotropic drugs
GS drugs
. psychotropic drugs
. . marijuana
RT central nervous system
narcotics
neurophysiology
physiochemistry
psychopharmacology
psychotherapy
sedatives

psychrometers
DEF Instruments for measuring humidity through the use of wet and dry bulb thermometers.
GS measuring instruments
. moisture meters
. . hygrometers
. . . psychrometers
RT atmospheric moisture
chemical analysis
humidity
humidity measurement
meteorological instruments

psychrophiles
RT mesophiles
microorganisms
thermophiles

PTM (modulation)
USE pulse time modulation

Ptolemaeus Crater
GS craters
. lunar craters
. . Ptolemaeus Crater
RT meteorite craters

public address systems
RT ∞ systems
warning systems

public health
GS biophysics
. health physics
. . public health
health
. health physics
. . public health
RT hazardous material disposal (in space)
hygiene
medical services
nonpoint sources
occupational diseases
orsi hygiene
pollution
sanitation
urban planning

public law
GS law (jurisprudence)
. public law
. . liabilities
. . . legal liability
. . penalties
RT air law
insurance (contracts)

public relations
RT ∞ cooperation
improvement
promotion
upgrading

public speaking
UF oratory
RT lectures
speech

publications
USE documents

Puck
(added July 1995)
DEF A natural satellite of Uranus, orbiting at a mean distance o of 86,010 kilometers.
GS celestial bodies
. natural satellites
. . Uranus satellites
. . . Puck
RT Uranus (planet)

Puerto Rico
GS landforms
. islands
. . West Indies
. . . Puerto Rico
nations
. United States
. . Puerto Rico

pulleys
RT ∞ belts
blocks
idlers
rollers
wheels

winches

pulling
RT ∞ drawing
∞ force
propulsion
traction

pulling (frequency stability)
USE **frequency pulling**

pulmonary circulation
GS circulation
. blood circulation
. . pulmonary circulation
RT alveoli
artificial cardiac pacemaker
blood pumps
heart implantation
lungs
respiratory system

pulmonary functions
RT alveoli
∞ functions
lungs

pulmonary lesions
GS diseases
. pulmonary lesions
injuries
. lesions
. . pulmonary lesions
RT lung morphology
lungs
occupational diseases
respiratory diseases

pulsar magnetospheres
(added July 1988)
GS stellar magnetospheres
. pulsar magnetospheres
RT magnetic fields
∞ magnetospheres
pulsars
stellar atmospheres
stellar magnetic fields

pulsars
GS celestial bodies
. radio sources (astronomy)
. . radio stars
. . . pulsars
. stars
. . neutron stars
. . . pulsars
. . radio stars
. . . pulsars
RT degenerate matter
gamma ray sources (astronomy)
pulsar magnetospheres
quasars
radiation sources
radio astronomy
radio bursts
starquakes
supernova remnants

pulsating flow
USE **unsteady flow**

pulse (cardiovascular)
USE **heart rate**

pulse amplitude
DEF A general term indicating the magnitude of a pulse. Used for pulse height.
UF *pulse height*
GS amplitudes
. pulse amplitude waveforms
. pulse amplitude
RT amplitude distribution analysis
electric pulses
photopeak
pulsed radiation
sawtooth waveforms
square waves

pulse amplitude modulation
UF *PAM (modulation)*
GS coding
. signal encoding
. . pulse modulation
. . . pulse amplitude modulation
modulation
. pulse modulation
. . pulse amplitude modulation
RT modems
P.A.C.M. telemetry

pulse charging
DEF Rapid and efficient method for charging electric batteries.
RT battery chargers
electric batteries
electric charge
storage batteries

pulse code modulation
DEF Any modulation which involves a pulse code. Used for PCM (modulation).
UF *PCM (modulation)*
GS coding
. signal encoding
. . pulse modulation
. . . pulse code modulation
. . . . delta modulation
. . . . differential pulse code modulation
modulation
. pulse modulation
. . pulse code modulation
. . . delta modulation
. . . differential pulse code modulation
RT bilevary code
decommutators
P.A.C.M. telemetry
PCM telemetry
unified S band

pulse communication
UF *digital communication*
GS telecommunication
. pulse communication
. . digital spacecraft television
RT bit error rate
communication networks
data transmission
delta modulation
differential pulse code modulation
digital television
electromagnetic missiles
electromagnetic pulses
frequency division multiplexing
modems
multiple access
multiplexing
orthogonal multiplexing theory
radio communication
radio transmission
satellite transmission
signal transmission
space communication
telegraph systems
telemetry
time division multiple access

pulse compression
DEF The coding and processing of a signal pulse of long time duration to one of short time duration and high range resolution, while maintaining the benefits of high pulse energy.
RT coding
compressing
radar

pulse diffraction
GS diffraction
. pulse diffraction
RT holographic optical elements
plasma jets
pulsed radiation
wave propagation

pulse Doppler radar
DEF A pulse radar system which utilizes the Doppler effect for obtaining information about the target (not including simple resolution from fixed targets).
GS radar
. Doppler radar
. . pulse Doppler radar
. . . monopulse radar
. . . Shuttle Imaging Radar
. pulse radar
. . pulse Doppler radar
. . . monopulse radar
. . . Shuttle Imaging Radar
RT cancellation circuits
coherent radar

pulse duration
DEF The time interval between the first and last instances at which the instantaneous amplitude reaches a stated fraction of the peak pulse amplitude. Used for light duration and pulse width.
UF *light duration*
pulse width
GS waveforms
. pulse duration
RT electric pulses
laser outputs
maser outputs
pulse repetition rate
pulsed radiation
sawtooth waveforms
square waves
time signals
ultrashort pulsed lasers

pulse duration modulation
DEF A form of pulse time modulation in which the duration of a pulse is varied. Used for PDM (modulation), pulse width modulation, and PWM (modulation).
UF *PDM (modulation)*
pulse width modulation
PWM (modulation)
GS coding
. signal encoding
. . pulse modulation
. . . pulse time modulation
. . . . pulse duration modulation
modulation
. pulse modulation
. . pulse time modulation
. . . pulse duration modulation
RT modems

pulse frequency modulation
DEF A form of pulse time modulation in which the pulse repetition rate is the characteristic varied. Used for PFM (modulation).
UF *PFM (modulation)*
GS coding
. signal encoding
. . frequency modulation
. . . pulse frequency modulation
. . pulse modulation
. . . pulse frequency modulation
modulation
. frequency modulation
. . pulse frequency modulation
. pulse modulation
. . pulse frequency modulation
RT communication equipment
differential pulse code modulation
modems

pulse frequency modulation telemetry
GS telecommunication
. radio communication
. . radio telemetry
. . . pulse frequency modulation telemetry
. telemetry
. . radio telemetry
. . . pulse frequency modulation telemetry
transmission
. signal transmission
. . telemetry
. . . radio telemetry
. . . . pulse frequency modulation telemetry
RT communication equipment
frequency modulation
modulation
pulse modulation
radio transmission
signal encoding

pulse generators
RT computation
electric pulses
function generators
∞ generators
impulse generators
laser cavities
lasers
plasma generators
pulse repetition rate
pulsed radiation
shock wave generators

pulse heating
GS hardening (materials)
. pulse heating
heat treatment
. annealing
. . pulse heating
heating
. transient heating
. . pulse heating
RT laser heating
simulated annealing

pulse height
USE pulse amplitude

pulse modulation
DEF Modulation of a carrier by a pulse train. Modulation of one or more characteristics of a pulse carrier.
GS coding
. signal encoding
. . pulse modulation
. . . pulse amplitude modulation
. . . pulse code modulation
. . . . delta modulation
. . . . differential pulse code modulation
. . . pulse frequency modulation
. . . pulse time modulation
. . . . pulse duration modulation
. . . . pulse position modulation
modulation
. pulse modulation
. . pulse amplitude modulation
. . pulse code modulation
. . . delta modulation
. . . differential pulse code modulation
. . pulse frequency modulation
. . pulse time modulation
. . . pulse duration modulation
. . . pulse position modulation
RT amplitude modulation
demodulation
demodulators
electric pulses
electromagnetic missiles
electromagnetic pulses
frequency modulation
light modulation
modems
modulators
phase modulation
pulse frequency modulation telemetry
pulsed radiation
radio telemetry
time division multiplexing
trigatrons

pulse position modulation
DEF A form of pulse time modulation in which the position in time of a pulse is varied. Also called pulse phase modulation. Used for PPM (modulation).
UF *PPM (modulation)*
GS coding
. signal encoding
. . pulse modulation
. . . pulse time modulation
. . . . pulse position modulation
modulation
. pulse modulation
. . pulse time modulation
. . . pulse position modulation
RT modems

pulse radar
DEF A type of radar, designed to facilitate range measurement, in which the transmitted energy is emitted in periodic short pulses.
GS radar
. pulse radar
. . pulse Doppler radar
. . . monopulse radar
. . . Shuttle Imaging Radar
RT coherent radar
continuous wave radar
Doppler radar
echo suppressors
electromagnetic pulses
meteorological radar
multistatic radar
polystation doppler tracking system
search radar
surveillance radar
synchronizers
tracking radar

pulse rate
SN (FOR CARDIOVASCULAR PULSE, USE HEART RATE)
UF *chronotrons*
GS rates (per time)
. pulse rate
. . pulse repetition rate
RT electric pulses
picosecond pulses
pulsed radiation

pulse recorders
USE counters

pulse repetition rate
GS rates (per time)
. pulse rate
. . pulse repetition rate
RT frequency response
optical pumping
pulse duration
pulse generators
pulsed lasers

pulse time modulation
DEF Modulation in which the values of instantaneous samples of the modulating wave are caused to modulate the time of occurrence of some characteristic of a pulse carrier. Used for PTM (modulation).
UF *PTM (modulation)*
GS coding
. signal encoding
. . pulse modulation
. . . pulse time modulation
. . . . pulse duration modulation
. . . . pulse position modulation
modulation
. pulse modulation
. . pulse time modulation
. . . pulse duration modulation
. . . pulse position modulation

pulse width
USE pulse duration

pulse width amplitude converters
RT ∞ converters
frequency converters

pulse width modulation
USE pulse duration modulation

pulsed jet engines
GS engines
. pulsed jet engines
RT electric rocket engines
electrothermal engines
plasma engines
resistojet engines

pulsed laser deposition
(added December 1992)
GS deposition
. laser deposition
. . pulsed laser deposition
utilization
. laser applications
. . laser deposition
. . . pulsed laser deposition
RT crystal growth
epitaxy
excimer lasers
laser heating
pulsed lasers
superconducting films
vapor deposition

pulsed lasers
GS stimulated emission devices
. lasers
. . pulsed lasers
. . . Q switched lasers
. . . ultrashort pulsed lasers
. . . ultraviolet lasers
RT argon lasers
carbon dioxide lasers
gas lasers
glass lasers
inertial fusion (reactor)
laser heating
laser target interactions
laser welding
nitrogen lasers
pulse repetition rate
pulsed laser deposition
ruby lasers
semiconductor lasers
TEA lasers
tube lasers
waveguide lasers

pulsed radiation
GS pulsed radiation
. electromagnetic pulses
. . system generated electromagnetic pulses
RT continuous radiation
corpuscular radiation
elastic waves
electromagnetic radiation
gamma ray lasers
laser damage
lasers
picosecond pulses
pulse amplitude
pulse diffraction
pulse duration
pulse generators
pulse modulation
pulse rate
∞ radiation
∞ rays

pulsejet engines
DEF Compressorless jet engines in which combustion takes place intermittently producing thrust by a series of explosions, commonly occurring at the approximate resonance frequency of the engine.
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . pulsejet engines
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . pulsejet engines
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . pulsejet engines
RT detonation
firing (ignition)
V-1 missile

pulses
DEF Short-wave trains of mechanical vibration.
GS pulses
. electric pulses
. electromagnetic pulses
. . system generated electromagnetic pulses
. geomagnetic pulsations
. . geomagnetic micropulsations
. micropulsations
. . geomagnetic micropulsations
. picosecond pulses
. pressure pulses
RT amplitudes
intermittency
solitary waves

pultrusion
DEF Process of pulling continuous lengths of resin impregnated fiber through a shaped, heated die to produce lengths of reinforced plastic.
GS forming techniques
. extruding
. . pultrusion
RT casting
composite structures
dies
epoxy matrix composites
fiber composites
glass fiber reinforced plastics
hot working
polymer matrix composites
preimpregnation
pressing (forming)
resin matrix composites

pulverizing
USE grinding (comminution)

pumice
DEF A light-colored, vesicular, glassy rock commonly having the composition of a rhyolite.
GS rocks
. igneous rocks
. . pumice
RT abrasives
obsidian
powder (particles)
soils

pump impellers
GS rotating bodies
. rotors
. . impellers
. . . pump impellers
RT centrifugal compressors
centrifugal pumps

pump seals
GS seals (stoppers)
. pump seals
RT gaskets
∞ glands
glands (seals)
hermetic seals
labyrinth seals
molecular pumps

∞ **pumping**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT blowing
compressed air
compressing
cryopumping
drainage
electron pumping
jet pumps
laser pumping
magnetic pumping
maser pumping
materials handling
nuclear pumping
optical pumping
plasma pumping
pumps
purging
windmills (windpowered machines)
windpowered pumps

pumps
SN (LIMITED TO PUMPS FOR MATERIALS—EXCLUDES HEAT PUMPS)
UF *hydraulic pumps*
GS pumps
. axial flow pumps
. . turbine pumps
. blood pumps
. centrifugal pumps
. diffusion pumps
. electromagnetic pumps
. fuel pumps
. jet pumps
. rams (pumps)
. vacuum pumps
. . condensation pumps
. . ion pumps
. . molecular pumps
. viscopumps
. windpowered pumps
RT bellows
centrifugal compressors
ejectors
feed systems
heat pumps
hydraulic equipment
impellers
injectors
lubrication systems
materials handling
packings (seals)
pipelines
preburners
∞ pumping
siphons
stators
turbomachinery
vaneless diffusers

punched cards
DEF Cards on which a pattern of holes or cuts is used to represent data.
GS cards
. punched cards
RT computer storage devices
data recorders
data recording
data storage
readers

punched tapes
DEF Tapes on which a pattern of holes or cuts is used to represent data.
RT automatic typewriters
computer storage devices
data recording
magnetic tapes
readers
∞ tapes

punches
RT dies
machine tools
molds
platens
presses
stamping

puncturing
USE piercing

pupa
RT insects
larvae

pupil size
RT pupillometry

pupillometry
RT biometrics
dark adaptation
light adaptation
∞ measurement
pupil size

pupils
GS anatomy
. sense organs
. . eye (anatomy)
. . . pupils
RT vision

purging
RT circulation
cleaning
decontamination
degassing
distillation
evacuating (vacuum)
flushing
outgassing
∞ pumping
purification
refining
∞ separation
venting

purification
UF purifiers
GS purification
. air purification
RT aeration
antiseptics
borehole
chemical sterilization
cleaning
crystallization
decontamination
dechlorinating
disinfection
dissipation
distillation
elimination
elution
enrichment
fluxing
getters
pasteurizing
polynuclear organic compounds
potable water
purging
purity
sanitation
∞ reduction
reduction (chemistry)
refining
scavenging
∞ separation
sewage treatment
solvent extraction
spacecraft sterilization
sterilization
sublimation
ultrapure metals
upgrading
washing
water treatment
zone melting

purifiers
USE purification

purines
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . purines
. . . . adenines
. . . . xanthines
. . . . . caffeine
. . . . . guanines
. . . . . uric acid

purity
RT clarity
concentration (composition)
contaminants
contamination
decontamination
dilution
fineness
pollution
potable liquids
purification
quality
trace contaminants
ultrapure metals
water pollution

purposes
RT goals

pursuit tracking
GS tracking (position)
. pursuit tracking
RT infrared tracking
radar tracking
satellite interceptors

push-pull amplifiers
DEF Amplifiers in which there are two identical signal branch circuits so as to operate in phase opposition and with input and output connections each balanced to ground. Used for balanced amplifiers.
UF *balanced amplifiers*
GS amplifiers
. push-pull amplifiers
RT phase modulation
power amplifiers

pushbroom sensor modes
DEF Spacecraft instrument arrangements in which large numbers of detectors comprising linear arrays are swept by the forward motion of the spacecraft to obtain increased fidelity and high sensitivity in the data captured.
GS modes
. pushbroom sensor modes
RT arrays
electro-optics
image processing
linear arrays
photodiodes

pushing
RT∞ force
propulsion

PWM (modulation)
USE pulse duration modulation

pycnometers
RT density (mass/volume)

pylon mounting
RT aerodynamic configurations
aircraft structures
columns (supports)
rigid mounting
structural members
supports
wind tunnel models

pylons
GS supports
. pylons
RT columns (supports)
structural members
struts
towers

Pyramid Lake (NV)
GS lakes
. Pyramid Lake (NV)
RT Nevada
water management
water resources

pyramidal bodies
RT∞ bodies
pyramids
reentry vehicles

pyramids
GS geometry
. Euclidean geometry
. . polyhedrons
. . . pyramids
RT frustums
pyramidal bodies

pyranometers
DEF Actinometers which measure the combined intensity of incoming direct solar radiation and diffuse sky radiation. The pyranometers consist of a recorder and a radiation sensing element which is mounted so that it views the entire sky. Sometimes called solarimeters.
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . pyranometers
RT photometers
radiometers
sky radiation

pyrazines
DEF Compounds that contain a six-membered heterocyclic ring containing nitrogen atoms in the 1 and 4 positions.
GS pyrazines
. azines
. . cyanurates
. . cyanuric acid
. . meclizine
. . methylene blue
. . phenothiazines

Pyrenees Mountains (Europe)
GS landforms
. mountains
. . Pyrenees Mountains (Europe)
RT Andorra
France
Spain

pyrenes
GS organic compounds
. hydrocarbons
. . pyrenes

Pyrex (trademark)
USE borosilicate glass

pyridine nucleotides
GS organic compounds

. nucleotides
. . pyridine nucleotides
phosphorus compounds
. phosphates
. . pyridine nucleotides

pyridines
DEF Compounds that contain a six-membered heterocyclic ring containing one nitrogen atom.
GS bases (chemical)
. pyridines
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . pyridines
RT Karl Fischer reagent
piperidine
quinoline

pyridoxine
UF *vitamin B 6*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . pyridoxine
vitamins
. pyridoxine

pyrimidines
DEF Compounds that contain a six-membered heterocyclic ring containing nitrogen atoms in the 1 and 3 positions.
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . pyrimidines
. . . . siloxan
. . . . thymidine
. . . . thymine
. . . . uracil

pyrites
GS chalcogenides
. sulfides
. . pyrites
iron compounds
. pyrites
minerals
. pyrites
sulfur compounds
. sulfides
. . pyrites

Pyroceram (trademark)
GS ceramics
. Pyroceram (trademark)
glass
. Pyroceram (trademark)

pyroelectricity
GS electrical properties
. pyroelectricity
thermodynamic properties
. thermophysical properties
. . pyroelectricity
RT piezoelectricity
polarization (charge separation)

pyrogen
GS gases
. flammable gases
. . pyrogen
RT torches

pyrographalloy
USE **composite materials**
pyrolytic graphite
refractory materials

pyroheliometers
DEF Actinometers which measure the intensity of direct solar radiation, consisting of a radiation sensing element enclosed in a casing which is closed except for a small aperture, through which the direct solar rays enter, and a recorder unit. Used for heliometry.
UF *heliometry*
GS measuring instruments
. heliometers
. . pyroheliometers
optical equipment
. heliometers
. . pyroheliometers
telescopes
. heliometers
. . pyroheliometers

pyrohydrolysis
DEF Decomposition by the action of heat and water vapor.
GS chemical reactions
. pyrohydrolysis
RT pyrolysis

pyrolysis
DEF Chemical decomposition by the action of heat.
GS chemical reactions
. cracking (chemical engineering)
. . pyrolysis
. thermal decomposition
. . pyrolysis
decomposition
. cracking (chemical engineering)
. . pyrolysis
. thermal decomposition
. . pyrolysis
RT ablation
endothermic reactions
exothermic reactions
pyrohydrolysis
thermal absorption
thermal degradation
thermal instability
thermogravimetry

pyrolytic graphite
UF *pyrographalloy*
GS carbonaceous materials
. graphite
. . pyrolytic graphite
minerals
. graphite
. . pyrolytic graphite
pyrolytic materials
. pyrolytic graphite
RT heat shielding

pyrolytic materials
GS pyrolytic materials
. pyrolytic graphite
RT ablative materials
ceramics
∞ materials
refractory coatings
refractory materials

pyrometallurgy
RT aerothermochemistry
alloying
chlorination
∞ converters
heat balance
metal working
∞ metallurgy
refining
sintering
sublimation
thermochemistry

pyrometers
DEF Instruments that measure high temperature, e.g., of molten lavas, by electrical or optical means.
GS measuring instruments
. temperature measuring instruments
. . pyrometers
. . . radiation pyrometers
. . . thermocouple pyrometers
RT temperature measurement

pyrometry
USE **temperature measurement**

pyrophoric materials
RT explosives
flammability
hypergolic rocket propellants
igniters
ignition temperature
∞ materials
metal combustion
solid propellant ignition
spontaneous combustion

pyrophyllite
DEF A white, greenish, gray, or brown phyllosilicate mineral that resembles talc.
GS aluminum compounds
. aluminum silicates
. . pyrophyllite
minerals
. pyrophyllite
silicon compounds
. silicates
. . aluminum silicates
. . . pyrophyllite
RT aluminum oxides

pyrotechnics
UF *fireworks*
GS pyrotechnics
. HMX
RT ammunition
bombs (ordnance)
chemical fuels
double base propellants
explosives
∞ flares
grenades
illuminating
incendiary ammunition
initiators (explosives)
ordnance
plastic propellants
projectiles
RDX
∞ rockets
∞ signals
thermites

pyroxenes
DEF A group of dark, rock-forming silicate minerals.
GS chalcogenides
. oxides
. . pyroxenes
. . . enstatite
minerals
. pyroxenes

. . enstatite
silicon compounds
. silicates
. . pyroxenes
. . . enstatite
RT eclogite
igneous rocks
regolith
rocks
soils

pyroxylin
USE cellulose nitrate

pyrrhotite
DEF A common reddish-brown to bronze hexagonal mineral.
GS chalcogenides
. sulfides
. . pyrrhotite
. . . troilite
iron compounds
. pyrrhotite
. . troilite
minerals
. pyrrhotite
. . troilite
sulfur compounds
. sulfides
. . pyrrhotite
. . . troilite

pyrroles
DEF Compounds that contain a five-membered heterocyclic ring containing one nitrogen atom.
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azoles
. . . . pyrroles
. . . . . carbazoles
. . . . . indoles
. . . . . tryptophan
RT methoxy systems
polypyrroles
thiophenes

Pyrrones (trademark)
RT ∞ polymers

pyruvates
RT organic liquids

Q

Q devices
RT magnetic mirrors
plasma pinch
zeta pinch

Q factors
UF *high Q*
quality factors
RT figure of merit
resonant vibration
spectral resolution
tuning

Q switched lasers
DEF A device for producing very short (about 30 ns)intense laser pulses by enhancing the storage and dumping of electronic energy in and out of the lasing medium.
GS stimulated emission devices
. lasers
. . pulsed lasers
. . . Q switched lasers
RT argon lasers
carbon dioxide lasers
chemical lasers
gas lasers
ruby lasers
semiconductor lasers
solid state lasers

Q values (nuclear physics)
GS value
. Q values (nuclear physics)
RT fusion reactors
storage rings (particle accelerators)
thermonuclear reactions
tokamak devices

QAM (modulation)
USE **quadrature amplitude modulation**

Qatar
(added February 1989)
GS nations
. Qatar
RT Asia

QCD
USE **quantum chromodynamics**

QH-60 helicopter
UF *Dash helicopter*
DSN helicopter
Gyrodyne DSN-3 helicopter
Gyrodyne military aircraft
GS Gyrodyne aircraft
. QH-60 helicopter
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . QH-60 helicopter

QPSK
USE **quadrature phase shift keying**

QSO (radio sources)
USE **quasars**

Quadrantid meteoroids
GS celestial bodies
. meteoroid showers
. . Quadrantid meteoroids
. meteoroids
. . Quadrantid meteoroids

quadrants
GS geometry
. Euclidean geometry
. . analytic geometry
. . . quadrants

quadraphase shift keying
USE **quadrature phase shift keying**

quadratic equations
GS algebra
. nonlinear equations
. . quadratic equations
analysis (mathematics)
. real variables
. . nonlinear equations
. . . quadratic equations
field theory (algebra)
. quadratic equations
RT ∞ equations
polynomials

quadratic programming
GS optimization
. mathematical programming
. . quadratic programming
research
. quadratic programming
RT ∞ programming

quadrature amplitude modulation
(added August 1991)
DEF Amplitude modulation in which the signal is 90 degrees out of phase with the carrier which it modulates.
UF *QAM (modulation)*
GS coding
. signal encoding
. . amplitude modulation
. . . quadrature amplitude modulation
modulation
. amplitude modulation
. . quadrature amplitude modulation
RT phase shift keying
quadrature phase shift keying

quadrature approximation
USE **quadratures**

quadrature phase shift keying
(added May 1991)
UF *QPSK*
quadraphase shift keying
GS coding
. signal encoding
. . phase modulation
. . . phase shift keying
. . . . quadrature phase shift keying
keying
. phase shift keying
. . quadrature phase shift keying
modulation
. phase modulation
. . phase shift keying
. . . quadrature phase shift keying
RT binary phase shift keying
quadrature amplitude modulation
satellite transmission

quadratures
DEF Elongations of 90 deg., usually specified as east or west in accordance with the direction of the body from the sun. The moon is a quadrature at first and last quarters. The situation of two periodic quantities differing by a quarter of a cycle. Used for quadrature approximation.
UF *quadrature approximation*
RT circular orbits
orbit calculation
orbital mechanics
orbits
space mechanics

quadrupole lenses
USE **magnetic lenses**

quadrupole networks
GS networks
. quadrupole networks

quadrupoles
DEF A linear accelerator having four longitudinal vanes in its resonating cavity, which are shaped to create RF electric fields that simultaneously accelerate, bunch, and focus the charged particle beam.
RT ∞ dipoles
nuclear quadrupole resonance
polarity

quail missile
GS decoys
. quail missile
missiles
. air to surface missiles
. . quail missile
RT countermeasures
turbojet engines

qualifications
RT certification
contractors
education
experience
fitness
personality tests
personnel
∞ tests

qualitative analysis
DEF An analysis in which some or all of the components of a sample are identified.
GS chemical tests
. chemical analysis
. . qualitative analysis
RT analytical chemistry
electrophotometry
flame spectroscopy
gas analysis
mass spectrometers
microanalysis
neutron activation analysis
quantitative analysis
spectroscopic analysis

quality
GS quality
. environmental quality
. . air quality
. . water quality
. riding quality
RT accuracy
adequacy
appearance
computer systems performance
concentration (composition)
consistency
contaminants
controllability

durability
evaluation
figure of merit
fineness
flight characteristics
∞ grade
impurities
∞ materials tests
∞ performance
pollution
precision
product development
purity
reliability
∞ resistance
specifications
stability
∞ tests
total quality management
upgrading
validity
variability

quality control
DEF An aggregate of functions designed to insure adequate quality in manufactured products by initial critical study of engineering design, materials, processes, equipment, and workmanship followed by periodic inspection and analysis. Used for reliability control.
UF *reliability control*
GS **quality control**
. total quality management
RT accelerated life tests
acceptability
aircraft reliability
assurance
average
Bayes theorem
burn-in
certification
chemical tests
circuit reliability
component reliability
confidence
confidence limits
construction
∞ control
correlation
correlation coefficients
covariance
data sampling
degrees of freedom
electrical properties
electronic equipment tests
error detection codes
errors
estimates
estimating
experiment design
extrapolation
hypotheses
infrared inspection
inspection
least squares method
linear prediction
low temperature tests
Mann-Whitney-Wilcoxon U test
∞ materials tests
mean
median (statistics)
mode (statistics)
nondestructive tests
normalizing (statistics)
operations research
optimization
orthogonal functions
orthogonality
precision
probability theory
process control (industry)
∞ processes
product development
production management
products
random errors
random sampling
range (extremes)
regression analysis
regression coefficients
reliability
reliability engineering
sampling
scheduling
sequential analysis
spacecraft reliability
specifications
standard deviation
standardization
standards
static tests
statistical analysis
statistical correlation
statistical distributions
statistical tests
structural reliability
∞ systems
task complexity
tasks
∞ tests
tolerances (mechanics)
ultrasonic flaw detection
value engineering
variability
variance (statistics)
wear tests

quality factors
USE **Q factors**

quantiles
DEF The values that mark frequency distribution interval boundaries that are determined by arranging a set of N observations in order of magnitude and marking off equal parts (N/P) of the total population P.
GS statistical analysis
. quantiles
RT mathematical models
statistical distributions
∞ statistics
symmetry

quantitative analysis
GS chemical tests
. chemical analysis
. . quantitative analysis
. . . Kjeldahl method
. . . Van Slyke method
RT analytical chemistry
chromatography
electrophotometry
gas analysis
gravimetry
iodimetry
Karl Fischer reagent
microanalysis
neutron activation analysis
polarography
qualitative analysis
radiochemical separation
spectroscopic analysis
volumetric analysis

quantity
USE **amount**

quantization
USE **measurement**

quantizer
USE **counters**

quantum amplifiers
GS amplifiers
. quantum amplifiers
RT lasers
light amplifiers
two-wavelength lasers
ultrashort pulsed lasers
ultraviolet lasers

quantum chemistry
GS physical chemistry
. quantum chemistry
RT ∞ chemistry
molecular orbitals
nuclear chemistry
quantum mechanics

quantum chromodynamics
DEF A gauge theory describing the interaction between quarks and gluons. Used for color (particle physics) and QCD.
UF *color (particle physics)*
QCD
GS field theory (physics)
. gauge theory
. . quantum chromodynamics
RT ∞ dynamics
gluons
instantons
leptons
particle interactions
quantum mechanics
quark models
quarks
standard model (particle physics)
string theory
strong interactions (field theory)
∞ theories

quantum counters
GS measuring instruments
. counters
. . radiation counters
. . . quantum counters
. radiation measuring instruments
. . radiation counters
. . . quantum counters
RT squid (detectors)

quantum dots
(added October 1997)
DEF Small (30 nm to 1 micron) metal or semiconductor structures that hold a discrete number of electrons; the number of electrons can be altered by modifying the electrostatic environment of the dot.
GS nanostructures (devices)
. quantum dots
RT electron tunneling
nonlinear optics
quantum electronics
quantum wells
quantum wires
semiconductor devices
semiconductor lasers

quantum efficiency
DEF A measure of the efficiency of conversion or utilization of light or some other form of energy.
RT energy conversion efficiency
energy technology
heterojunction devices
laser outputs
solar cells
volt–ampere characteristics

quantum electrodynamics
GS electrodynamics
. quantum electrodynamics
quantum mechanics
. quantum electrodynamics
RT electromagnetic fields
Feynman diagrams
field theory (physics)
Landau–Ginzburg equations
resonance fluorescence
self consistent fields

quantum electronics
DEF The branch of electronics that essentially deals with lasers and laser devices which require quantum theory for their exact description.
RT∞ electronics
lasers
nanostructures (devices)
quantum dots
quantum mechanics
quantum theory
quantum wires
resonant tunneling
tunnel junctions

quantum generators
USE stimulated emission devices

quantum mechanics
GS quantum mechanics
. Pauli exclusion principle
. quantum electrodynamics
RT atomic interactions
Bethe–Salpeter equation
Born approximation
Dyson theory
electromagnetic interactions
energy distribution
Fermi–Dirac statistics
function space
group velocity
Hylleraas coordinates
light–cone expansion
∞ mechanics (physics)
Orr–Sommerfeld equations
phase velocity
quantum chemistry
quantum chromodynamics
quantum electronics
quantum optics
Racah coefficient
relativity
squeezed states (quantum theory)
statistical mechanics
strangeness
U spin space
wave packets

quantum numbers
DEF A number assigned to one f the various values of a quantized quantity in its descrete range. The quantum numbers arise from the mathematics of the wave equations. When the quantity has a quantum, the quantum number is the number of such quantums. A state may be described by giving a sufficient set of compatible numbers. In the cutomary forumlations, each quantum number is either an integer (which may be positive, negative, or zero) or an odd half–integer.
RT angular momentum
electrons
energy levels
nuclear spin
∞ numbers
parity
selection rules (nuclear physics)

quantum optics
RT nonlinear optics
∞ optics
physical optics
quantum mechanics
quantum theory

quantum statistics
UF *Bose–Einstein statistics*
RT bosons
Fermi–Dirac statistics
fermions
many body problem
∞ statistics
superfluidity
Thomas–Fermi model

quantum theory
DEF The theory first stated by Max Planck (before the Physical Society of Berlin on December 14, 1900) that all electromagnetic radiation is emitted and absorbed in quants, each of magnitude hv, h being the Planck constant and v the frequency of the radiation. Used for Wightman theory.
UF *Wightman theory*
GS theoretical physics
. quantum theory
. . Bohr theory
RT angular momentum
atomic theory
charm (particle physics)
de Broglie wavelengths
Dirac equation
electroweak model
elementary particles
emission
energy levels
field theory (physics)
flavor (particle physics)
forbidden transitions
ground state
Hamiltonian functions
Klein–Dunham potentials
magnetic monopoles
Mandelstam representation
nuclear physics
nuclear spin
parity
perturbation theory
photons
physical optics
Planck's constant
quantum electronics
quantum optics
∞ radiation
radiation laws
Schumann–Runge bands
squeezed states (quantum theory)
standard model (particle physics)
statistical distributions
statistical mechanics
string theory
supergravity
supersymmetry
∞ theories
wave equations

quantum well lasers
(added September 1993)
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . semiconductor lasers
. . . . quantum well lasers
. . solid state lasers
. . . quantum well lasers
stimulated emission devices
. lasers
. . semiconductor lasers
. . . quantum well lasers
. . solid state lasers
. . . quantum well lasers
RT energy gaps (solid state)
heterojunction devices
indium gallium arsenides
indium phosphides
laser materials
quantum wells
waveguide lasers

quantum wells
DEF Effective potential wells created by a minimum in the conduction band or a maximum in the valence band that arises when a smaller band–gap semiconductor is sandwiched between a larger band–gap semiconductor.
GS potential energy
. electric potential
. . quantum wells
. . . photoexcitation
RT band structure of solids
binding energy
conduction bands
conduction electrons
energy bands
energy gaps (solid state)
gaps
heterojunction devices
heterojunctions
quantum dots
quantum well lasers
quantum wires
resonant tunneling
valence

quantum wires
(added October 1987)
GS nanostructures (devices)
. quantum wires
RT nonlinear optics
quantum dots
quantum electronics
quantum wells
semiconductor devices
semiconductor lasers

quark models
GS models
. quark models
. . quark parton model
RT flavor (particle physics)
particle theory
quantum chromodynamics
quarks
standard model (particle physics)

quark parton model
DEF A theoretical model which summarizes our understanding of how protons and neutrons

are made up of the fundamental subparticles called quarks.
GS models
. quark models
. . quark parton model
RT hadrons
inelastic scattering
leptons
nuclear models
partons
quarks

quarks
GS particles
. elementary particles
. . quarks
RT flavor (particle physics)
gluons
instantons
partons
quantum chromodynamics
quark models
quark parton model

quarries
USE mines (excavations)

quartic equations
GS algebra
. nonlinear equations
. . quartic equations
analysis (mathematics)
. real variables
. . nonlinear equations
. . . quartic equations
RT ∞ equations

quartiles
RT probability density functions
statistical analysis
statistical distributions

quartz
DEF Crystalline silica, an important rock-forming mineral.
GS chalcogenides
. oxides
. . dioxides
. . . silicon dioxide
. . . . quartz
. . . . . coesite
. . . . . stishovite
. . silicon oxides
. . . silicon dioxide
. . . . quartz
. . . . . coesite
. . . . . stishovite
minerals
. quartz
. . coesite
. . stishovite
silicon compounds
. silicon oxides
. . silicon dioxide
. . . quartz
. . . . coesite
. . . . stishovite
RT abrasives
felsite
flint
igneous rocks
rocks
sands
soils

quartz crystals
GS crystals
. quartz crystals
RT frequency control
frequency stability
radio transmitters
silicon dioxide

quartz lamps
GS lighting equipment
. luminaires
. . quartz lamps

quartz transducers
GS transducers
. quartz transducers
RT piezoelectric crystals
pressure sensors

quartzite
GS rocks
. metamorphic rocks
. . quartzite

quasars
UF *QSO (radio sources)*
quasi-stellar radio sources
GS celestial bodies
. radio sources (astronomy)
. . quasars
RT active galactic nuclei
active galaxies
blazars
extragalactic radio sources
galaxies
gravitational collapse
irregular galaxies
pulsars
radio astronomy
radio bursts
radio emission
radio galaxies
radio jets (astronomy)
radio stars
stars
x ray spectra

Quasat
SN (QUASAR SATELLITE)
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . Quasat
observatories
. astronomical observatories
. . astronomical satellites
. . . Quasat
RT European space programs
NASA programs
radio astronomy
radio telescopes
spaceborne astronomy
very long base interferometry

quasi-particles
USE elementary excitations

quasi-steady states
RT equilibrium flow
fluid dynamics
nonequilibrium flow
steady flow
steady state creep
uniform flow

quasi-stellar radio sources
USE quasars

quasilinearity
USE nonlinearity

quaternary alloys
GS alloys
. quaternary alloys
RT alloying

quaternions
RT classical mechanics
number theory

Quebec
GS nations
. Canada
. . Quebec

quefrencies
DEF In cepstral analysis, the frequency of periodic ripples in a spectra of a signal that contains echoes. Quefrencies are expressed in cycles per hertz or in seconds.
GS frequencies
. acoustic frequencies
. . audio frequencies
. . . quefrencies
RT cepstra

∞ quenching
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT extinguishing
quenching (atomic physics)
quenching (cooling)
rapid quenching (metallurgy)

quenching (atomic physics)
DEF Phenomena in which very strong electric fields cause the orbit of an electron or atom to precess rapidly so the average magnetic moment associated with its orbit angular momentum is reduced to zero.
GS gyration
. precession
. . quenching (atomic physics)
RT angular momentum
laser cooling
magnetic moments
particle spin
∞ physics
∞ quenching

quenching (cooling)
DEF Rapid cooling as in metallurgy. Used for flame quenching.
UF *flame quenching*
GS cooling
. quenching (cooling)
. . rapid quenching (metallurgy)
RT baths
combustion
dipping
extinguishing
hardening (materials)
heat treatment
microstructure
∞ quenching
submerging
supercooling
supersaturation
thermomechanical treatment
water immersion

query languages
DEF Command languages used to search and retrieve information.
GS languages
. command languages
. . query languages
RT human-computer interface

information retrieval

Questol aircraft
(added December 1990)
SN (EXPERIMENTAL STOL TRANSPORT RESEARCH AIRPLANE)
UF *experimental STOL transport rsch airplane*
GS research vehicles
. research aircraft
. . Questol aircraft
V/STOL aircraft
. short takeoff aircraft
. . Questol aircraft
RT ∞ aircraft
NASA programs

queueing theory
RT ARPA computer network
bunching
mathematical models
operations research
statistical analysis
stochastic processes
∞ theories

quiet engine program
GS programs
. NASA programs
. . quiet engine program
RT aircraft engines
engine noise
jet aircraft noise
jet engines
noise reduction

quinoline
GS bases (chemical)
. quinoline
nitrogen compounds
. quinoline
organic compounds
. quinoline
RT alkaloids
drugs
pyridines

quinones
(added November 1982)
UF *benzoquinone*
chinone
GS organic compounds
. quinones
RT ketones

quinoxalines
DEF A group of heterocyclic compounds consisting of a benzene ring condensed with a diazine ring.
GS organic compounds
. hydrocarbons
. . quinoxalines
plastics
. synthetic resins
. . thermoplastic resins
. . . quinoxalines
resins
. synthetic resins
. . thermoplastic resins
. . . quinoxalines
RT polymerization

quotients
RT dividing (mathematics)

R

R Coronae Borealis stars
UF *RCB stars*
GS celestial bodies
. stars
. . supergiant stars
. . . R Coronae Borealis stars
. . variable stars
. . . irregular variable stars
. . . . R Coronae Borealis stars
RT carbon stars
cool stars
dust
stellar envelopes
stellar mass ejection

R5D aircraft
USE C-64 aircraft

R7V aircraft
USE C-121 aircraft

RA-28 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . RA-28 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . RA-28 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . RA-28 engine

rabbits
GS animals
. vertebrates
. . mammals
. . . rodents
. . . . rabbits

Racah coefficient
RT angular momentum
coefficients
coupling
quantum mechanics
transformations (mathematics)

race factors
RT anthropology
culture (social sciences)
ethnic factors
human beings
human performance
races (anthropology)
social factors
sociology
∞ variable

races (anthropology)
RT American Indians
anthropology
culture (social sciences)
human beings
minorities
race factors

racetracks (particle accelerators)
RT∞ accelerators
electromagnets
magnetic fields
particle acceleration
particle accelerators
particle trajectories

∞ **racks**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT racks (frames)
racks (gears)

racks (frames)
RT∞ racks
∞ shelves
∞ storage
supports

racks (gears)
GS gears
. racks (gears)
RT∞ racks
translational motion

racon beacons
USE radar beacons

radant
GS antennas
. directional antennas
. . radar antennas
. . . radant
radar equipment
. radar antennas
. . radant
RT radar filters
radomes
slot antennas
waveguide antennas

radar
(added January 1991)
DEF A method, system or technique of using beamed, reflected, and timed radio waves for detecting, locating, or tracking objects (such as rockets), for measuring altitude, etc., in any of various activities, such as air traffic control or guidance. The electronic equipment or apparatus used to generate, transmit, receive, and usually, to display radio scanning or locating waves, a radar set. Used for radio detection and ranging.
UF *radio detection and ranging*
GS radar
. airborne radar
. . airborne surveillance radar
. coherent radar
. continuous wave radar
. Doppler radar
. . multistatic radar
. . pulse Doppler radar
. . . monopulse radar
. . . Shuttle Imaging Radar
. ground penetrating radar
. imaging radar
. . Shuttle Imaging Radar
. incoherent scatter radar
. . EISCAT radar system (Europe)
. infrared radar
. landing radar
. meteorological radar
. moving target indicators
. multispectral radar
. optical radar
. . differential absorption lidar
. pulse radar
. . pulse Doppler radar
. . . monopulse radar
. . . Shuttle Imaging Radar
. radar measurement
. range and range rate tracking
. satellite-borne radar
. search radar
. . over-the-horizon radar
. secondary radar
. space based radar
. . Shuttle Imaging Radar
. surveillance radar
. . airborne surveillance radar
. . Cobra Dane (radar)
. . multistatic radar
. synthetic aperture radar
. . Shuttle Imaging Radar
. . side-looking radar
. tracking radar
. . Cobra Dane (radar)
. TRADEX radar system
. Venus orbiting imaging radar (spacecraft)
RT aircraft instruments
cancellation circuits
circumlunar communication
collision avoidance
display devices
distance measuring equipment
electromagnetic radiation
flight instruments
instrument landing systems
lunar communication
microwave absorption
navigation instruments
night flights (aircraft)
pulse compression
radar detection
scatterometers

radar absorbers
GS absorbers (materials)
. radar absorbers
. . antiradar coatings
RT countermeasures
electromagnetic absorption
microwave absorption

radar altimeters
USE radio altimeters

radar antennas
GS antennas
. directional antennas
. . radar antennas
. . . radant
radar equipment
. radar antennas
. . radant
RT aircraft antennas
diplexers
dipole antennas
doghouses (electronics)
high resolution coverage antennas
horn antennas
lens antennas
microwave antennas
parabolic antennas
radomes
reflector antennas
Schwarzschild antennas
sidelobe reduction
slot antennas
steerable antennas

radar approach control
UF *RAPCON (control)*
GS approach control
. radar approach control
ground based control
. air traffic control
. . radar approach control
traffic control
. air traffic control
. . radar approach control
RT airborne radar approach
aircraft guidance
approach indicators
∞ control
instrument landing systems
landing aids
landing instruments
landing radar
radarscopes
surveillance radar

radar astronomy
DEF The study of celestial bodies within the solar system by means of radiation originating on Earth but reflected from the body under observation.
GS astronomy
. radar astronomy
RT radio astronomy

radar attenuation
GS attenuation
. wave attenuation
. . radar attenuation
RT atmospheric attenuation
electromagnetic absorption
electromagnetic wave transmission
radio attenuation
sidelobe reduction
signal transmission
transmission
wave propagation

radar beacons
DEF Beacons transmitting characteristic signals on radar frequency, permitting crafts to determine their bearings and sometimes the range of the beacons. Used for racon beacons.
UF *racon beacons*
GS navigation aids
. beacons
. . radar beacons
. . . discrete address beacon system
radar equipment
. radar beacons
. . discrete address beacon system
RT aircraft communication
compasses
position (location)
solar compasses
transponders

radar beams
GS beams (radiation)
. radar beams
RT beamforming
pencil beams

radar clutter maps
GS maps
. radar clutter maps

radar corner reflectors
UF *lunaberg lenses*
GS radar equipment
. radar reflectors
. . radar corner reflectors
reflectors
. radar reflectors
. . radar corner reflectors
RT reflector antennas
retroreflectors

radar cross sections
DEF The ratios of power returned in a radar echo to power received by the target reflecting the signal.
RT angels (radar)
computational electromagnetics
∞ cross sections
low observable reentry vehicles
moving target indicators

radar data
RT∞ data
microwave photography
video data

radar detection
GS detection
. radar detection
RT coherent radar
continuous wave radar
digital radar systems
Doppler radar
electronic countermeasures
electronic warfare
multistatic radar
optical radar
over-the-horizon radar
radar
radar target scatter site program
radarscopes
resolution cell
satellite-borne radar
search radar
signal detection

radar direction finders
USE **radio direction finders**

radar displays
USE **radarscopes**

radar echoes
UF *radar reflections*
GS echoes
. radar echoes
. . angels (radar)
. . clutter
. . lunar radar echoes
. . solar radar echoes
. . Venus radar echoes
RT airborne radar
auroral echoes
chaff
ghosts
glint
targets

radar equipment
GS radar equipment
. doghouses (electronics)
. radar antennas
. . radant
. radar beacons
. . discrete address beacon system
. radar filters
. radar receivers
. radar reflectors
. . radar corner reflectors
. radar transmitters
. radarscopes
. . plan position indicators
. retroreflectors
RT airborne equipment
airborne radar
airport surface detection equipment
automated radar terminal system
digital radar systems
diplexers
distance measuring equipment
Doppler radar
∞ equipment
jammers
look angles (electronics)
onboard equipment
parabolic antennas
radio equipment
radomes
range finders
servomechanisms
synthetic aperture radar
transponders

radar filters
GS electromagnetic wave filters
. electric filters
. . radar filters
radar equipment
. radar filters
RT∞ filters
FIR filters
microwave filters
radant
radio filters
waveguide filters

radar geology
DEF The application of imaging radar to geologic problems.
GS geology
. radar geology
RT geological surveys
ground penetrating radar
Shuttle Imaging Radar

radar homing missiles
DEF Radar-following missiles designed to attack radar transmitters.
GS missiles
. radar homing missiles
RT military technology
missile control
missile systems
target recognition

radar imagery
GS imagery
. radar imagery
RT airborne radar
change detection
image analysis
imaging radar
imaging techniques
infrared radar
lunar equator
Magellan spacecraft (NASA)
Priroda module
radar maps
resolution cell
Shuttle Imaging Radar
side-looking radar
x ray imagery

radar maps
GS maps
. radar maps
RT airborne radar
map matching guidance
meteorological charts
radar imagery

radar measurement
GS radar
. radar measurement
RT altimetry
differential absorption lidar
distance measuring equipment
∞ measurement
radio altimeters
rangefinding
satellite altimetry

radar navigation
GS navigation
. radar navigation
RT air navigation
air traffic control
aircraft guidance
all-weather air navigation
automatic flight control
celestial navigation
collision avoidance
dead reckoning
distance
distance measuring equipment
Doppler navigation
Doppler radar
Doppler-Fizeau effect
ground based control
inertial navigation
interplanetary navigation
map matching guidance
radarscopes
radio navigation
satellite navigation systems
space navigation
surface navigation
Tacan

radar networks
DEF A series of tracking stations each of which can individually or jointly track a target by utilizing an interchange of radar information. Used for multiradar tracking.
UF *multiradar tracking*
GS networks
. tracking networks
. . radar networks
RT Doppler radar
polystation doppler tracking system
tracking stations

radar observation
USE radar tracking

radar photography
GS imagery
. photography
. . multispectral photography
. . . radar photography
RT black and white photography
microwave photography
radarscopes
spectral reconnaissance
ultraviolet photography

radar range
DEF The distance from a radar to a target as measured by the radar. The maximum distance at which a radar set is effective in detecting targets.
GS distance
. radar range
RT continuous wave radar
optical slant range
over-the-horizon radar
radio range

radar receivers
GS radar equipment
. radar receivers
receivers
. radar receivers
RT airborne radar
digital radar systems
electromagnetic noise
microwave sensors
radio receivers
repeaters

radar reception
GS signal reception
. radar reception
RT radio reception
∞ receiving
sidelobe reduction

radar reflections
USE radar echoes

radar reflectors
DEF Devices capable of or intended for reflecting radar signals.
GS radar equipment
. radar reflectors
. . radar corner reflectors
reflectors
. radar reflectors
. . radar corner reflectors
RT parabolic antennas
parabolic reflectors
radio echoes
reflector antennas
sidelobe reduction

radar resolution
GS resolution
. radar resolution
RT angular resolution
display devices
high resolution coverage antennas
sidelobe reduction
spectral resolution

radar scanning
DEF The action or process of moving or directing a searching radar beam.
GS scanning
. radar scanning
RT conical scanning
digital radar systems
frequency scanning
meteorological radar
multiple beam interval scanners
panoramic scanning
radio tracking
side-looking radar
surveillance

radar scattering
GS scattering
. radar scattering
RT EISCAT radar system (Europe)
incoherent scatter radar
incoherent scattering
radar target scatter site program
scatterometers

radar signatures
GS signatures
. radar signatures
RT Cobra Dane (radar)
detection
imagery
microwave signatures
signature analysis
target recognition

radar target scatter site program
UF *RATSCAT program*
GS programs
. radar target scatter site program
targets
. radar targets
. . radar target scatter site program
RT radar detection
radar scattering

radar targets
DEF Objects which reflect a sufficient amount of a radar signal to produce an echo signal on the radar screen.
GS targets
. radar targets
. . radar target scatter site program
RT airborne radar
digital radar systems
early warning systems
multiple target tracking
radial velocity

radar tracking
UF *radar observation*
GS tracking (position)
. radar tracking
RT automated radar terminal system
Ballistic Missile Early Warning System
compensatory tracking
digital radar systems
Doppler radar
early warning systems
meteorological radar
monopulse radar
moving target indicators
multiple target tracking
pursuit tracking
radio tracking
range and range rate tracking
rangefinding
ravinsondes
search radar
slewing
spacecraft tracking
surveillance radar
threat evaluation
tracking radar
transponder control group

radar transmission
GS transmission
. electromagnetic wave transmission
. . radar transmission
. signal transmission
. . radar transmission
RT atmospheric attenuation
digital radar systems
EISCAT radar system (Europe)
electromagnetic pulses
radio transmission
radome materials
wave attenuation
wave propagation

radar transmitters
GS radar equipment
. radar transmitters
transmitters
. radar transmitters

Radarsat
DEF A civilian remote sensing satellite that will be polar orbiting and is jointly being developed by Canada and the United Kingdom with NASA providing the launch. In addition to a synthetic aperture radar, it may carry other instruments such as the Advanced Along Track Scanning Ra-

ometer (AATSR) and the Advanced Radar Altimeter (ARA)/Ocean Wave Spectrometer (OWS). Launch is planned for 1994.
GS Canadian spacecraft
. Radarsat
RT Canadian space program
synthetic aperture radar

radarscopes
DEF The cathode ray oscilloscopes used in radar sets, which display the received signal in such a manner as to indicate things such as range or bearing. Used for radar displays.
UF *radar displays*
GS display devices
. radarscopes
. . plan position indicators
radar equipment
. radarscopes
. . plan position indicators
RT aircraft guidance
indicating instruments
microwave imagery
microwave photography
radar approach control
radar detection
radar navigation
radar photography
surveillance radar

radial distribution
GS distribution (property)
. radial distribution
RT Rayleigh distribution
star distribution
wind profiles

radial drainage patterns
USE drainage patterns

radial flow
GS fluid flow
. radial flow
RT axial flow
centrifugal compressors
diffusion
flow geometry
gas flow
heat transmission
two dimensional flow

radial velocity
DEF In radar, that vector component of the velocity of a moving target that is directed away from or toward the ground station.
GS rates (per time)
. radial velocity
velocity
. radial velocity
RT astronomical spectroscopy
Doppler effect
radar targets
red shift
velocity measurement

radiance
SN (DIRECTIONAL EMISSION RATE PER UNIT AREA OF RADIATION)
DEF In radiometry, a measure of the intrinsic radiant intensity emitted by a radiator in a given direction. It is the irradiance (radiant flux density) produced by radiation from the source upon a unit surface area oriented normal to the line between source and receiver, divided by the solid angle subtended by the source at the receiving surface. It is assumed that the medium between the radiator and receiver is perfectly transparent; therefore radiance is independent of attenuation between source and receiver.
GS electromagnetic properties
. optical properties
. . radiance
rates (per time)
. flux density
. . radiant flux density
. . . radiance
RT black body radiation
brightness
emissivity
emittance
glare
incandescence
∞ intensity
irradiance
lumens
luminosity
neutron flux density
solar flux density
transmissometers
visibility

radiancy
SN (EMISSION RATE PER UNIT AREA OF RADIATION)
DEF The rate of radiant energy emission from a unit area of a source in all the radial directions of the overspreading hemisphere.
GS rates (per time)
. flux density
. . radiant flux density
. . . radiancy
RT electron flux density
illuminance
luminous intensity
neutron flux density
particle flux density
proton flux density
solar flux density

radiant cooling
GS cooling
. radiant cooling
RT radiative heat transfer
surface cooling

radiant energy
USE radiation

radiant flux density
SN (DYNES/CM–SEC AS DISTINGUISHED FROM RADIATION PRESSURE—DYNES/SQ CM)
DEF The rate of radiant energy emission from a unit area of a source in all the radial directions of the overspreading hemisphere. Used for power density (electromagnetic), radiant intensity, and radiation intensity.
UF *power density (electromagnetic)*
radiant intensity
radiation intensity
GS rates (per time)
. flux density
. . radiant flux density
. . . irradiance
. . . . illuminance
. . . . solar constant
. . . lumens
. . . luminous intensity
. . . . illuminance
. . . . luminance
. . . particle flux density
. . . . electron flux density
. . . . neutron flux density
. . . . proton flux density
. . . radiancy
. . . . radiancy
. . . . solar flux density
. . . . solar constant
RT BL Lacertae objects
brightness
brightness distribution
dosimetry
emissivity
emittance
far fields
flux (rate)
gamma ray bursts
laser outputs
luminosity
maser outputs
mass to light ratios
post-blast nuclear radiation
∞ radiation
radiation counters
radiation pressure
radio spectra
scattering functions
solar reflectors
sound intensity
view effects

radiant heating
UF *radiation heating*
GS heating
. radiant heating
RT ∞ energy
gas heating
∞ radiation
radiative heat transfer
radiative transfer
solar heating

radiant intensity
USE radiant flux density

∞ radiation
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The process by which energy is emitted or transferred in the form of photons or electromagnetic waves. Used for radiant energy and radiation emission.
UF *radiant energy*
radiation emission
RT alpha particles
antenna radiation patterns
artificial radiation belts
atmospheric radiation
background noise
background radiation
base heating
beams (radiation)
black body radiation
Cerenkov radiation
circumsolar radiation
coherent acoustic radiation
coherent electromagnetic radiation
coherent radiation
continuous radiation
corpuscular radiation
cosmic rays
cyclotron radiation
diffuse radiation
Earth radiation budget experiment
elastic waves
electromagnetic noise
electromagnetic radiation
electron radiation
emission
extraterrestrial radiation
extreme ultraviolet radiation
fallout

far infrared radiation
far ultraviolet radiation
flux (rate)
flux density
galactic radiation
gamma rays
geophysics
gravitational waves
harmonic radiation
heating
incident radiation
infrared radiation
inner radiation belt
interstellar radiation
ion cyclotron radiation
ionizing radiation
irradiation
Kirchhoff law of radiation
light (visible radiation)
long wave radiation
longitudinal waves
lunar radiation
Lyman alpha radiation
Lyman beta radiation
microwaves
modulated continuous radiation
monochromatic radiation
near infrared radiation
near ultraviolet radiation
nonthermal radiation
nuclear medicine
nuclear radiation
nucleon potential
outer radiation belt
photons
plane waves
planetary radiation
plasma radiation
polarized electromagnetic radiation
polarized radiation
post-blast nuclear radiation
pulsed radiation
quantum theory
radiant flux density
radiant heating
radiation absorption
radiation belts
radiation chemistry
radiation counters
radiation damage
radiation detectors
radiation distribution
radiation dosage
radiation effects
radiation hardening
radiation hazards
radiation injuries
radiation laws
radiation measurement
radiation measuring instruments
Radiation Meteoroid spacecraft
radiation pressure
radiation protection
radiation pyrometers
radiation shielding
radiation sickness
radiation sources
radiation spectra
radiation therapy
radiation tolerance
radiation transport
radiation trapping
radiative transfer
radioactivity
radiology
reflected waves
relic radiation
resonance fluorescence
self absorption
short wave radiation
silicon radiation detectors
sky radiation
solar corpuscular radiation
solar radiation
Solar Radiation 1 satellite
Solar Radiation 3 satellite
solar radiation shielding
solar wind
sound waves
spectral emission
standing waves
stellar radiation
Stokes law of radiation
stratosphere radiation
synchrotron radiation
temperature effects
terrestrial radiation
thermal radiation
TRAP program
tropospheric radiation
ultrasonic radiation
ultraviolet radiation
Volterra equations
x ray sources

radiation absorption
GS energy absorption
. radiation absorption
. . electromagnetic absorption
. . . auroral absorption
. . . gamma ray absorption
. . . infrared absorption
. . . microwave absorption
. . . multiphoton absorption
. . . photoabsorption
. . . polar cap absorption
. . . ultraviolet absorption
. . . x ray absorption
. . molecular absorption
. . self absorption
RT ∞ absorption
absorption cross sections
atmospheric attenuation
gamma ray absorptiometry
Golay detector cells
gray gas
interstellar extinction
material absorption
neutron absorbers
nuclear reactions
photon absorptiometry
∞ radiation
radiation chemistry
stopping power

Radiation and Meteoroid satellite
GS artificial satellites
. geophysical satellites
. . Radiation and Meteoroid satellite

radiation belts
DEF Envelopes of charged particles trapped in the magnetic field of a spatial body. Used for geomagnetically trapped particles and Van Allen radiation belts.
UF *geomagnetically trapped particles*
Van Allen radiation belts
GS particles
. charged particles
. . magnetically trapped particles
. . . radiation belts
. . . . artificial radiation belts
. . . . inner radiation belt
. . . . outer radiation belt
. . . . proton belts
. corpuscular radiation
. . radiation belts
. . . artificial radiation belts
. . . inner radiation belt
. . . outer radiation belt
. . . proton belts
. trapped particles
. . magnetically trapped particles
. . . radiation belts
. . . . artificial radiation belts
. . . . inner radiation belt
. . . . outer radiation belt
. . . . proton belts
RT aerospace environments
∞ belts
cosmic rays
Earth atmosphere
Earth magnetosphere
electron density (concentration)
electron precipitation
electron trajectories
electrons
elementary particles
entrapment
exosphere
extraterrestrial radiation
ionizing radiation
ionospheric drift
magnetic fields
mirror point
plasmas (physics)
proton precipitation
protons
∞ radiation
solar radiation
trapping
upper atmosphere

radiation chemistry
DEF The branch of chemistry concerned with the chemical effects, including decomposition, of energetic radiation or particles of matter.
GS radiation chemistry
. photodecomposition
. photodissociation
. photolysis
. radiolysis
RT ∞ chemistry
electromagnetic radiation
∞ radiation
radiation absorption

radiation counters
DEF Instruments used for detecting or measuring moving subatomic particles by a counting process. Used for ionization counters, particle counters, and particle detectors.
UF *ionization counters*
particle counters
particle detectors
GS measuring instruments
. counters
. . radiation counters
. . . Cerenkov counters
. . . electron counters
. . . Geiger counters
. . . neutron counters
. . . . neutron spectrometers
. . . particle telescopes
. . . proportional counters
. . . quantum counters
. . . scintillation counters
. . . spark chambers
. radiation measuring instruments
. . radiation counters

. . . Cerenkov counters
. . . electron counters
. . . Geiger counters
. . . neutron counters
. . . . neutron spectrometers
. . . particle telescopes
. . . proportional counters
. . . quantum counters
. . . scintillation counters
. . . spark chambers
RT bubble chambers
channel multipliers
cloud chambers
coincidence circuits
dosimeters
electrostatic probes
fluence
gas discharge tubes
hodoscopes
ion traps (instrumentation)
ionization chambers
ionizing radiation
nuclear emulsions
particle flux density
proton flux density
radiant flux density
∞ radiation
scintillating fibers
spectrometers

radiation damage
GS damage
. radiation damage
. . laser damage
radiation effects
. radiation damage
. . laser damage
RT ionizing radiation
∞ radiation
single event upsets

radiation detectors
GS measuring instruments
. radiation measuring instruments
. . radiation detectors
. . . dosimeters
. . . . threshold detectors (dosimeters)
. . . Golay detector cells
. . . silicon radiation detectors
RT ∞ detectors
Geiger counters
health physics
multi-anode microchannel arrays
∞ radiation
satellite-borne instruments
Vela satellites

radiation distribution
UF *radiation fields*
GS distribution (property)
. radiation distribution
. . antenna radiation patterns
. . . sidelobes
. . diffraction patterns
. . . Kossel pattern
. . . rainbows
RT corpuscular radiation
elastic waves
electromagnetic radiation
field theory (physics)
flux density
null zones
∞ patterns
∞ radiation
vertical distribution
wave dispersion

radiation dosage
DEF The amount of radiation absorbed by a material, system, or tissue in a given amount of time; usually measured in units as roentgen. Used for radiation exposure.
UF *radiation exposure*
GS dosage
. radiation dosage
RT biological effects
dosimeters
exposure
health physics
irradiation
∞ radiation
single event upsets

radiation effects
GS radiation effects
. radiation damage
. . laser damage
. radiation injuries
. radiolysis
. single event upsets
RT biological effects
blackout (propagation)
Bragg curve
CRRES (satellite)
damage
dosimeters
∞ effects
electron radiation
fallout
gamma rays
health physics
hematopoiesis
irradiation
mechanical properties
neutrons
nuclear explosion effect
nuclear radiation
nuclear vulnerability
particle tracks
physiological effects
post-blast nuclear radiation
Poynting-Robertson effect
preserving
∞ radiation
radioactive contaminants
space based radar
sterilization effects

radiation emission
USE radiation

radiation exposure
USE radiation dosage

radiation fields
USE radiation distribution

radiation hardening
GS hardening (systems)
. radiation hardening
RT antennas
electronic equipment
∞ radiation

radiation hazards
GS hazards
. radiation hazards
RT dermatitis
dosimeters
electromagnetic radiation
fallout
flux density
hazardous materials
hazardous wastes
health physics
ionizing radiation
laser damage
mutations
nuclear explosion effect
nuclear explosions
nuclear radiation
occupational diseases
operational hazards
∞ radiation
radioactive contaminants
radioactive materials
radioactive wastes
radioactivity
reactor safety

radiation heating
USE radiant heating

radiation injuries
GS injuries
. radiation injuries
radiation effects
. radiation injuries
RT burns (injuries)
health physics
∞ radiation

radiation intensity
USE radiant flux density

radiation laws
GS laws
. radiation laws
. . Kirchhoff law of radiation
. . Stefan-Boltzmann law
. . Stokes law of radiation
RT electromagnetic radiation
quantum theory
∞ radiation

radiation measurement
RT dosage
dosimeters
irradiation
∞ measurement
∞ radiation
sensitometry

radiation measuring instruments
UF *photoelectromagnetic detectors*
photosensors
radiation meters
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . infrared spectrometers
. . . . filter wheel infrared spectrometers
. . . pyranometers
. . . radiometers
. . . . Dicke radiometers
. . . . infrared detectors
. . . . . FLIR detectors
. . . . . infrared radiometers
. . . . . Advanced Very High Resolution Radiometer
. . . . . infrared scanners
. . . . . visible infrared spin scan radiometer
. . . . microwave radiometers
. . . . . Advanced Microwave Sounding Unit
. . . . passive L-band radiometers
. . . . pressure modulator radiometers
. . . . spectroradiometers
. . . solar spectrometers
. . . spectroheliographs
. . . spectrophotometers

. . . . infrared spectrophotometers
. . . . ultraviolet spectrophotometers
. . . ultraviolet detectors
. . . . ultraviolet spectrometers
. . . . . high dispersion spectrographs
. . . . . Total Ozone Mapping Spectrometer
. . . . ultraviolet spectrophotometers
. . . x ray detectors
. . bolometers
. . Ebert spectrometers
. . electrostatic probes
. . Fabry–Perot spectrometers
. . hodoscopes
. . infrared instruments
. . . infrared detectors
. . . . FLIR detectors
. . . . infrared radiometers
. . . . . Advanced Very High Resolution Radiometer
. . . . . infrared scanners
. . . . . visible infrared spin scan radiometer
. . . infrared interferometers
. . . infrared spectrometers
. . . . filter wheel infrared spectrometers
. . . infrared spectrophotometers
. . photometers
. . . electrophotometers
. . . ultraviolet spectrometers
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping Spectrometer
. . . ultraviolet spectrophotometers
. . radiation counters
. . . Cerenkov counters
. . . electron counters
. . . Geiger counters
. . . neutron counters
. . . . neutron spectrometers
. . . particle telescopes
. . . proportional counters
. . . quantum counters
. . . scintillation counters
. . . spark chambers
. . radiation detectors
. . . dosimeters
. . . . threshold detectors (dosimeters)
. . . Golay detector cells
. . . silicon radiation detectors
. . riometers
RT ∞ detectors
Earth radiation budget experiment
health physics
ionization chambers
monitors
nuclear emulsions
optical measuring instruments
∞ radiation
safety devices
solar instruments
Vela satellites
view effects

radiation medicine
USE **nuclear medicine**

Radiation Meteoroid spacecraft
RT **meteoroids**
∞ **radiation**
∞ **spacecraft**
spacecraft configurations

radiation meters
USE **radiation measuring instruments**

radiation noise
USE **electromagnetic noise**

radiation pressure
SN (DYNES/SQ CM AS DISTINGUISHED FROM RADIANT FLUX DENSITY—DYNES/CM–SEC)
DEF Pressure exerted upon any material body by electromagnetic radiation incident upon it.
GS **pressure**
. **radiation pressure**
. . **electron pressure**
. . **lumens**
. . **luminous intensity**
. . . **illuminance**
. . . **luminance**
. . **sound pressure**
RT **barodivic waves**
Bassel–Bredichin theory
comet tails
corpuscular radiation
elastic waves
electromagnetic radiation
Kohoutek comet
particle flux density
perturbation
photophoresis
radiant flux density
∞ **radiation**
solar flux density
solar radiation
solar wind
stellar winds

radiation protection
GS **protection**
. **radiation protection**
. . **radiation shielding**
. . . **solar radiation shielding**
RT **antiradiation drugs**
cysteamine
health physics
∞ **radiation**
synchrotron radiation
thermal protection
visors

radiation pyrometers
GS **measuring instruments**
. **temperature measuring instruments**
. . **pyrometers**
. . . **radiation pyrometers**
RT **bolometers**
circumsolar telescopes
optical pyrometers
∞ **radiation**
temperature measurement
thermocouple pyrometers

radiation resistance
USE **radiation tolerance**

radiation shielding
UF *nuclear shielding*
GS **protection**
. **radiation protection**
. . **radiation shielding**
. . . **solar radiation shielding**
shielding
. **radiation shielding**
. . **solar radiation shielding**
RT **absorbers (materials)**
attenuators
Boral
electromagnetic absorption
electromagnetic shielding
gamma rays
∞ **insulated structures**
magnetic shielding
neutron absorbers
neutron flux density
neutrons
nuclear reactors
protons
∞ **radiation**
radio frequency shielding
reactor materials
reflectors
safety devices
space based radar
spacecraft shielding
stopping power
Tower Shielding Reactor 2

radiation sickness
DEF A syndrome following intense acute exposure to ionizing radiation. It is characterized by nausea and vomiting a few hours after exposure. Further symptoms include bloody diarrhea, hemorrhage under the skin (and internally), epilation (hair falling out), and a decrease in blood cell level.
GS **diseases**
. **radiation sickness**
RT **antiradiation drugs**
dermatitis
health physics
∞ **radiation**
radiopathology

radiation sources
UF *coherent sources*
GS **radiation sources**
. **monochromators**
. **neutron sources**
. **point sources**
RT **corpuscular radiation**
duochromators
electromagnetic radiation
electron sources
extragalactic radio sources
∞ **generators**
heat sources
interstellar masers
ion sources
light sources
pulsars
∞ **radiation**
radio sources (astronomy)
radioactive materials
sound generators
∞ **sources**
x ray stars

radiation spectra
GS **spectra**
. **radiation spectra**
. . **absorption spectra**
. . . **Fraunhofer lines**
. . . **Herzberg bands**
. . . **telluric lines**
. . **electromagnetic spectra**
. . . **gamma ray spectra**
. . . **infrared spectra**
. . . **line spectra**
. . . . **Balmer series**
. . . . **D lines**
. . . . **electronic spectra**
. . . . **Fraunhofer lines**
. . . . **H lines**
. . . . . **H alpha line**
. . . . . **H beta line**
. . . . . **H gamma line**
. . . . **K lines**
. . . . **Lyman spectra**

. . . . Paschen series
. . . . Rydberg series
. . . . telluric lines
. . . radio spectra
. . . . microwave spectra
. . . Raman spectra
. . . stellar spectra
. . . . solar spectra
. . . UBV spectra
. . . ultraviolet spectra
. . . vibrational spectra
. . . visible spectrum
. . . x ray spectra
. . emission spectra
RT astronomical spectroscopy
Cosmic Background Explorer satellite
energy spectra
mass spectra
noise spectra
plasma spectra
∞ radiation

radiation therapy
UF *radiotherapy*
GS therapy
. radiation therapy
RT cancer
medical science
pathology
∞ radiation

radiation tolerance
UF *radiation resistance*
radiosensitivity
GS sensitivity
. radiation tolerance
tolerances (physiology)
. radiation tolerance
RT human tolerances
irradiation
∞ radiation
∞ resistance
tolerances (mechanics)

radiation transport
DEF The study of radiation from emission to absorption.
RT exploding wires
∞ radiation
radiative transfer
transport properties

radiation trapping
DEF Confinement of radiation with a magnetic field.
RT argon
Earth magnetosphere
excitation
metastable state
plasma physics
∞ radiation

radiative heat transfer
GS radiative transfer
. radiative heat transfer
transmission
. heat transmission
. . heat transfer
. . . radiative heat transfer
RT concentrators
convective heat transfer
cooling fins
heat radiators
infrared reflection
near infrared radiation
radiant cooling
radiant heating
satellite temperature
spacecraft radiators
Stefan-Boltzmann law
surface cooling
thermohydraulics
Trombe walls
view effects

radiative lifetime
RT decay
half life

radiative recombination
GS recombination reactions
. electron recombination
. . radiative recombination
. electron–ion recombination
. . radiative recombination
RT airglow
atomic recombination
carrier injection
deionization
lightning

radiative transfer
GS radiative transfer
. radiative heat transfer
RT atmospheric correction
cosmic rays
electromagnetic radiation
energy transfer
extraterrestrial radiation
galactic radiation
heat transfer
heat transmission
interstellar radiation
near infrared radiation
planetary atmospheres
polarized electromagnetic radiation
radiant heating
∞ radiation
radiation transport
radio bursts
radio stars
solar radiation
stellar atmospheres
stellar radiation

∞ radiators
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Any sources of radiant energy, especially electromagnetic radiation. Devices that dissipate the heat from something as from water or oil, not necessarily by radiation only.
RT antennas
heat radiators
sound transducers
thermosiphons

radicals
GS radicals
. amino radical
. formyl ions
. free radicals
. . hydroxyl radicals
. methylidyne
. vanadyl radical
. vinyl radical
RT ∞ roots

radii
UF *radius*
GS dimensions
. radii
. . Larmor radius
geometry
. Euclidean geometry
. . radii
. . . Larmor radius
RT circles (geometry)
circumferences
diameters
lines (geometry)
radio frequencies
segments

radio altimeters
DEF Devices that measure the altitude of a craft above the terrain by measuring the elapsed time between transmission of radio waves from the craft and the reception of the same waves reflected from the terrain. Used for radar altimeters.
UF *radar altimeters*
GS flight instruments
. radio altimeters
measuring instruments
. distance measuring equipment
. . altimeters
. . . radio altimeters
RT aircraft instruments
automatic pilots
instrument landing systems
radar measurement

radio antennas
GS antennas
. radio antennas
. . microwave antennas
. . . horn antennas
. . . lens antennas
. . . rectennas
. . . spaceborne antennas
radio equipment
. radio antennas
. . microwave antennas
. . . horn antennas
. . . lens antennas
. . . rectennas
. . . spaceborne antennas
RT aircraft antennas
backfire antennas
directional antennas
omnidirectional antennas
reception diversity
reflector antennas
rhombic antennas
satellite antennas
Schwarzschild antennas
two reflector antennas
whip antennas

radio astronomy
DEF The study of celestial objects through observation of radiofrequency waves emitted or reflected by these objects. Specifically, the study of celestial objects by measurement of the radiation emitted by them in the radiofrequency range of the electromagnetic spectrum.
GS astronomy
. radio astronomy
RT astronomical interferometry
astronomical observatories
astronomical spectroscopy
brightness distribution
brightness temperature
coronal holes
extragalactic radio sources
extraterrestrial radio waves
gamma ray astronomy
IUE
linear polarization
Maffei galaxies
Michelson interferometers
phase switching interferometers

pulsars
quasars
Quasat
radar astronomy
radio jets (astronomy)
SAS-1
SAS-2
SAS-3
∞ science
very high frequency radio equipment
Very Large Array (VLA)
very long base interferometry
Very Long Baseline Array (VLBA)

Radio Astronomy Explorer 2
USE **Explorer 49 satellite**

Radio Astronomy Explorer B
USE **Explorer 49 satellite**

Radio Astronomy Explorer satellite
GS **artificial satellites**
. **scientific satellites**
. . Explorer **satellites**
. . . **Radio Astronomy Explorer satellite**

radio attenuation
UF *radio signal attenuation*
GS attenuation
. **wave attenuation**
. . **radio attenuation**
RT atmospheric attenuation
electromagnetic absorption
electromagnetic wave transmission
ground effect (communications)
radar attenuation
signal transmission
transhorizon radio propagation
transmission
wave propagation

Radio Attenuation Measurement project
UF *RAM project*
GS programs
. projects
. . **Radio Attenuation Measurement project**

radio aurorae
GS atmospheric radiation
. auroras
. . **radio aurorae**
RT ∞ disturbances
ionospherics
nightglow
solar activity

radio beacons
DEF Transmitters together with their associated equipment, that emit signals enabling the determination, by means of suitable receiving equipment, of direction, distance, or position with respect to the beacon. Used for radio ranges.
UF *radio ranges*
GS navigation aids
. beacons
. . **radio beacons**
. . . omnidirectional radio ranges
. . . . self calibrating omnirange
radio equipment
. radio transmitters
. . **radio beacons**
. . . omnidirectional radio ranges
. . . . self calibrating omnirange
transmitters
. radio transmitters
. . **radio beacons**
. . . omnidirectional radio ranges
. . . . self calibrating omnirange
RT airport beacons
Beacon Collision Avoidance System
homing devices
instrument landing systems
landing aids
∞ markers
night flights (aircraft)
ORBIS
ORBIS CAL satellite
ranges (facilities)
solar compasses

radio broadcasting
USE **broadcasting**

radio bursts
GS **bursts**
. **radio bursts**
. . **solar radio bursts**
. . . **type 2 bursts**
. . . **type 3 bursts**
. . . **type 4 bursts**
. . . **type 5 bursts**
electromagnetic radiation
. radio waves
. . extraterrestrial radio waves
. . . **radio bursts**
. . . . **solar radio bursts**
. . . . . **type 2 bursts**
. . . . . **type 3 bursts**
. . . . . **type 4 bursts**
. . . . . **type 5 bursts**
. . **radio emission**
. . . **radio bursts**
. . . . **solar radio bursts**
. . . . . **type 2 bursts**
. . . . . **type 3 bursts**
. . . . . **type 4 bursts**
. . . . . **type 5 bursts**
emission
. radio emission
. . **radio bursts**
. . . **solar radio bursts**
. . . . **type 2 bursts**
. . . . **type 3 bursts**
. . . . **type 4 bursts**
. . . . **type 5 bursts**
extraterrestrial radiation
. extraterrestrial radio waves
. . **radio bursts**
. . . **solar radio bursts**
. . . . **type 2 bursts**
. . . . **type 3 bursts**
. . . . **type 4 bursts**
. . . . **type 5 bursts**
RT ∞ disturbances
pulsars
quasars
radiative transfer
solar radio emission
stellar radiation

radio communication
GS telecommunication
. **radio communication**
. . radio relay systems
. . . code division multiple access
. . . time division multiple access
. . radio telegraphy
. . radio telemetry
. . . pulse frequency modulation telemetry
. . telephony
RT access control
aircraft communication
blackout (propagation)
broadcasting
circumlunar communication
code division multiplexing
communication equipment
communication networks
Fleet Satellite Communication System
frequency division multiple access
frequency division multiplexing
ground-air-ground communication
interplanetary communication
interstellar communication
land mobile satellite service
lunar communication
Marisat 1 satellite
Marisat satellites
mobile communication systems
MSAT
NASCOM network
point to point communication
Project SETI
pulse communication
radiotelephones
reentry communication
satellite communication
ship to shore communication
space communication
spacecraft communication
telegraph systems
telemetry
television systems
transoceanic communication
underground communication
vocoders
voice communication

radio control
DEF Remote control of a pilotless airplane, rocket, or spacecraft by means of radio signals that activate controlling devices.
GS remote control
. **radio control**
RT aircraft control
automatic control
∞ control
Deep Space Instrumentation Facility
ground based control
missile control
spacecraft control

radio detection and ranging
USE **radar**

radio direction finders
DEF Radio receiving sets, together with associated equipment, used to determine the direction from which a radio signal is transmitted. Used for direction finders (radio) and radar direction finders.
UF *direction finders (radio)*
radar direction finders
GS display devices
. position indicators
. . **radio direction finders**
measuring instruments
. indicating instruments
. . position indicators
. . . **radio direction finders**
navigation aids
. beacons
. . **radio direction finders**
. navigation instruments
. . **radio direction finders**
RT aircraft equipment
compasses
direction finding
flight instruments

gyrocompasses
homing
homing devices
radiogoniometers
VHF omnirange navigation

radio echoes
UF *radio reflection*
GS echoes
. radio echoes
RT angels (radar)
auroral echoes
ghosts
Harvard Radio Meteor Project
infrared reflection
lunar echoes
radar reflectors
ultraviolet reflection

radio electronics
RT ∞ electronics

radio emission
GS electromagnetic radiation
. radio waves
. . radio emission
. . . CN emission
. . . hydroxyl emission
. . . radio bursts
. . . . solar radio bursts
. . . . . type 2 bursts
. . . . . type 3 bursts
. . . . . type 4 bursts
. . . . . type 5 bursts
. . . solar radio emission
. . . . solar radio bursts
. . . . . type 2 bursts
. . . . . type 3 bursts
. . . . . type 4 bursts
. . . . . type 5 bursts
emission
. radio emission
. . CN emission
. . hydroxyl emission
. . radio bursts
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. . solar radio emission
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
RT extragalactic radio sources
extraterrestrial radio waves
quasars
radio jets (astronomy)

radio equipment
GS radio equipment
. radio antennas
. . microwave antennas
. . . horn antennas
. . . lens antennas
. . . rectennas
. . . spacetennas
. radio filters
. radio receivers
. . superheterodyne receivers
. . transmitter receivers
. . whistler recorders
. radio telescopes
. . kilometer wave orbiting telescope
. . Very Large Array (VLA)
. . Very Long Baseline Array (VLBA)
. radio transmitters
. . radio beacons
. . . omnidirectional radio ranges
. . . . self calibrating omnirange
. . radiometeorographs
. . radiosondes
. . . ionosondes
. . . rawinsondes
. . radiotelephones
. . sonobuoys
. . transmitter receivers
. reception diversity
. spacecraft antennas
. transponders
. very high frequency radio equipment
RT airborne equipment
antennas
broadcasting
communication equipment
crystal filters
cylindrical antennas
jammers
near fields
onboard equipment
radar equipment

radio filters
GS electromagnetic wave filters
. electric filters
. . radio filters
radio equipment
. radio filters
RT crystal filters
∞ filters
interference grating
microwave filters
radar filters
tunable filters

radio frequencies
DEF Frequencies at which coherent electromagnetic radiation of energy is useful for communications purposes.
GS frequencies
. radio frequencies
. . extremely low frequencies
. . high frequencies
. . intermediate frequencies
. . low frequencies
. . . very low frequencies
. . microwave frequencies
. . . C band
. . . extremely high frequencies
. . . P band
. . . superhigh frequencies
. . ultrahigh frequencies
. . . P band
. . very high frequencies
. . . P band
RT audio frequencies
carrier frequencies
radii

radio frequency discharge
GS electric current
. electric discharges
. . radio frequency discharge
RT electrodeless discharges
electron emission
ring discharge

radio frequency heating
GS heating
. radio frequency heating
RT induction heating
plasma heating

radio frequency impedance probes
GS measuring instruments
. impedance probes
. . radio frequency impedance probes
RT impedance measurement
ion probes
microwave probes
plasma probes

radio frequency interference
DEF Degradation of the reception of a wanted signal caused by radio frequency disturbance.
UF *radio interference*
GS electromagnetic interference
. radio frequency interference
. . blackout (propagation)
. . . polar radio blackout
. . chirp
. . . chirp signals
. . electromagnetic noise
. . . atmospherics
. . . . ionospherics
. . . . . dawn chorus
. . . . . hiss
. . . . sudden enhancement of atmospherics
. . . . whistlers
. . . cosmic noise
. . . ionospheric noise
. . . . whistlers
. . . shot noise
. . . white noise
. . . . thermal noise
. . ionospheric cross modulation
RT clutter
cross coupling
electromagnetic compatibility
electronic countermeasures
electronic warfare
extraterrestrial radio waves
∞ interference
interference grating
interference immunity
jamming
noise generators
noise storms
signal fading

radio frequency ion thruster engines
USE **RIT engines**

radio frequency noise
USE **electromagnetic noise**

radio frequency radiation
USE **radio waves**

radio frequency shielding
GS shielding
. electromagnetic shielding
. . radio frequency shielding
RT radiation shielding
spacecraft shielding

radio galaxies
GS celestial bodies
. galaxies
. . active galaxies
. . . radio galaxies
. radio sources (astronomy)
. . extragalactic radio sources
. . . radio galaxies
RT active galactic nuclei
blazars
disk galaxies
Maffei galaxies
quasars

radio horizons
DEF Loci or points at which direct rays from a radio transmitter become tangential to the Earth's surface.
GS horizon
. radio horizons
RT horizon scanners

radio interference
USE radio frequency interference

radio interferometers
DEF Interferometers operating at radio frequencies. Radio interferometers are used in radio astronomy and in satellite tracking.
GS measuring instruments
. interferometers
. . radio interferometers
RT astrophysics
Orion (radio interferometry network)
very long base interferometry

radio jets (astronomy)
DEF Jets of energetic particles occurring in radio galaxies and quasars usually emitted from the nuclear (active) region of the extragalactic radio source.
GS celestial bodies
. radio sources (astronomy)
. . extragalactic radio sources
. . . radio jets (astronomy)
particles
. charged particles
. . plasma jets
. . . radio jets (astronomy)
RT astrophysics
energetic particles
extraterrestrial radiation
extraterrestrial radio waves
galactic nuclei
galactic radio waves
quasars
radio astronomy
radio emission

radio meteorology
GS meteorology
. radio meteorology
RT atmospherics
meteorological radar
radiosondes

radio meteors
DEF Meteors which have been detected by the reflection of radio signals from the meteor trails of relatively high ion density (ion columns).
GS celestial bodies
. meteoroids
. . radio meteors
RT atmospheric ionization
meteor trails

radio navigation
DEF Navigation based upon the reception of radio signals.
GS navigation
. radio navigation
. . hyperbolic navigation
. . . Decca navigation
. . . LORAC navigation system
. . . loran
. . . . loran C
. . . . loran D
. . . Shoran
. . Tacan
. . VHF omnirange navigation
RT air navigation
air traffic control
aircraft guidance
all-weather air navigation
astronavigation
automatic flight control
celestial navigation
collision avoidance
dead reckoning
distance measuring equipment
Doppler navigation
flight control
guidance (motion)
homing devices
inertial navigation
interplanetary navigation
navigation aids
omnidirectional radio ranges
positioning
radar navigation
satellite navigation systems
solar compasses
space navigation
surface navigation

radio observation
GS observation
. radio observation
RT space observations (from Earth)

radio occultation
GS occultation
. radio occultation
RT atmospheric composition
atmospheric pressure
atmospheric temperature
planetary atmospheres
space probes
spacecraft trajectories

radio physics
RT ∞ physics
∞ science
theoretical physics

radio probing
RT measuring instruments
∞ probes

radio propagation
USE radio transmission

radio range
SN (EXCLUDES RADIO BEACONS)
GS distance
. radio range
range (extremes)
. frequency ranges
. . radio range
RT radar range

radio ranges
USE radio beacons

radio receivers
GS communication equipment
. radio receivers
. . superheterodyne receivers
. . transmitter receivers
. . whistler recorders
radio equipment
. radio receivers
. . superheterodyne receivers
. . transmitter receivers
. . whistler recorders
receivers
. radio receivers
. . superheterodyne receivers
. . transmitter receivers
. . whistler recorders
RT data links
directors (antenna elements)
electromagnetic noise
intermediate frequency amplifiers
loudspeakers
Orion (radio interferometry network)
parasitic elements (antennas)
radar receivers
reception diversity
television reception
transponders
tuners

radio reception
GS signal reception
. radio reception
RT homodyne reception
radar reception
∞ receiving
reception diversity
scatter propagation
television reception

radio reflection
USE radio echoes

radio relay systems
GS telecommunication
. radio communication
. . radio relay systems
. . . code division multiple access
. . . time division multiple access
RT communication equipment
communication satellites
data links
Defense Communications Satellite System
Earth terminal measurement system
Earth terminals
Global Tracking Network
Molniya satellites
MSAT
orbit spectrum utilization
∞ relay
∞ systems
TDR satellites

radio scattering
GS scattering
. radio scattering
. . microwave scattering
RT atmospheric diffusion
atmospheric scattering
scatter propagation
signal fading
signal transmission

radio signal attenuation
USE radio attenuation

radio signal propagation
USE radio transmission

radio signals
RT broadcasting
Project SETI
signal distortion
signal mixing
∞ signals
transhorizon radio propagation
whistlers

radio sources (astronomy)
SN (LIMITED TO EXTRATERRESTRIAL RADIO SOURCES)
DEF Celestial objects that emit radio waves.
GS celestial bodies
. radio sources (astronomy)
. . Cassiopeia A
. . extragalactic radio sources

. . . radio galaxies
. . . radio jets (astronomy)
. . quasars
. . radio stars
. . . pulsars
RT BL Lacertae objects
blazars
CN emission
extraterrestrial radio waves
galactic nuclei
galaxies
gamma ray sources (astronomy)
hydroxyl emission
Irregular galaxies
Maffei galaxies
Milky Way Galaxy
radiation sources
∞ sources

radio spectra
DEF Frequencies of electromagnetic radiation usable for radio communication.
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . radio spectra
. . . . microwave spectra
RT carrier waves
electromagnetic noise
H I regions
radiant flux density

radio spectroscopy
GS spectroscopy
. radio spectroscopy
RT astronomical spectroscopy
ultraviolet spectra
ultraviolet spectroscopy
x ray spectroscopy

radio stars
GS celestial bodies
. radio sources (astronomy)
. . radio stars
. . . pulsars
. stars
. . radio stars
. . . pulsars
RT quasars
radiative transfer
stellar radiation

radio telegraphy
GS telecommunication
. radio communication
. . radio telegraphy
RT communication equipment
keying
Morse code

radio telemetry
GS telecommunication
. radio communication
. . radio telemetry
. . . pulse frequency modulation telemetry
. telemetry
. . radio telemetry
. . . pulse frequency modulation telemetry
transmission
. signal transmission
. . telemetry
. . . radio telemetry
. . . . pulse frequency modulation telemetry
RT communication equipment
data transmission
extraterrestrial communication
ground support equipment
measuring instruments
pulse modulation
radiometeorographs
radiosondes
space communication
wireless communication

radio telescopes
DEF Devices for receiving, amplifying, and measuring the intensity of radio waves originating outside the Earth's atmosphere or reflected from a body outside the atmosphere.
GS radio equipment
. radio telescopes
. . kilometer wave orbiting telescope
. . Very Large Array (VLA)
. . Very Long Baseline Array (VLBA)
telescopes
. radio telescopes
. . kilometer wave orbiting telescope
. . Very Large Array (VLA)
. . Very Long Baseline Array (VLBA)
RT antennas
Jodrell Bank Observatory
optical equipment
phase switching interferometers
Quasat

radio tracking
GS tracking (position)
. radio tracking
. . wildlife radiolocation
RT radar scanning
radar tracking
range and range rate tracking
rangefinding
rawinsondes
spacecraft tracking

radio transmission
DEF The transmission of signals by means of radiated electromagnetic waves other than light or heat waves. Used for radio propagation and radio signal propagation.
UF *radio propagation*
radio signal propagation
GS transmission
. electromagnetic wave transmission
. . radio transmission
. . . double sideband transmission
. . . ionospheric propagation
. . . . ionospheric F-scatter propagation
. . . microwave transmission
. . . multipath transmission
. . . short wave radio transmission
. . . single sideband transmission
. . . spread spectrum transmission
. . . transequatorial propagation
. . . transhorizon radio propagation
. signal transmission
. . radio transmission
. . . double sideband transmission
. . . ionospheric propagation
. . . . ionospheric F-scatter propagation
. . . microwave transmission
. . . multipath transmission
. . . short wave radio transmission
. . . single sideband transmission
. . . spread spectrum transmission
. . . transequatorial propagation
. . . transhorizon radio propagation
RT antipodes
atmospheric attenuation
broadcasting
code division multiplexing
companding
data transmission
Earth-ionosphere waveguide
F region
frequency reuse
frequency shift keying
magnetoionics
modulation
multiplexing
packet switching
pulse communication
pulse frequency modulation telemetry
radar transmission
radome materials
satellite transmission
scatter propagation
Seafarer project
Sommerfeld approximation
Symphonie satellites
Voice of America
wave attenuation
wave propagation

radio transmitters
DEF Devices for producing radio-frequency power, for purposes of radio transmission.
GS radio equipment
. radio transmitters
. . radio beacons
. . . omnidirectional radio ranges
. . . . self calibrating omnirange
. . radiometeorographs
. . radiosondes
. . . ionosondes
. . . rawinsondes
. . radiotelephones
. . sonobuoys
. . transmitter receivers
transmitters
. radio transmitters
. . radio beacons
. . . omnidirectional radio ranges
. . . . self calibrating omnirange
. . radiometeorographs
. . radiosondes
. . . ionosondes
. . . rawinsondes
. . radiotelephones
. . sonobuoys
. . transmitter receivers
RT multichannel communication
quartz crystals
television transmission
transponders
wildlife radiolocation

radio wave refraction
GS refraction
. atmospheric refraction
. . radio wave refraction
RT wave dispersion

radio waves
DEF Waves produced by oscillation of an electric charge at a frequency useful for radio communication. Used for radio frequency radiation.
UF *radio frequency radiation*
GS electromagnetic radiation
. radio waves
. . decametric waves
. . extraterrestrial radio waves
. . . galactic radio waves
. . . . North Polar Spur (astronomy)
. . . radio bursts
. . . . solar radio bursts
. . . . . type 2 bursts

. . . . . type 3 bursts
. . . . . type 4 bursts
. . . . . type 5 bursts
. . . solar radio emission
. . . . solar radio bursts
. . . . . type 2 bursts
. . . . . type 3 bursts
. . . . . type 4 bursts
. . . . . type 5 bursts
. . long wave radiation
. . radio emission
. . . CN emission
. . . hydroxyl emission
. . . radio bursts
. . . . solar radio bursts
. . . . . type 2 bursts
. . . . . type 3 bursts
. . . . . type 4 bursts
. . . . . type 5 bursts
. . . solar radio emission
. . . . solar radio bursts
. . . . . type 2 bursts
. . . . . type 3 bursts
. . . . . type 4 bursts
. . . . . type 5 bursts
. . short wave radiation
. . . microwaves
. . . . centimeter waves
. . . . decimeter waves
. . . . microwave emission
. . . . millimeter waves
. . . submillimeter waves
. . sky waves
. . . whistlers
RT atmospherics
coherent electromagnetic radiation
electromagnetic noise
electromagnetic surface waves
extraterrestrial radiation
far infrared radiation
frequencies
ground wave propagation
monochromatic radiation
multipath transmission
northernal radiation
planetary radiation
polarized electromagnetic radiation
scatter propagation
solar radiation
solitary waves
thermal radiation
transverse waves
traveling waves
tropospheric waves

radioactive age determination
UF *radioactive dating*
RT ∞ aging
fossils
geochronology
half life
∞ measurement
radiochemistry
radiogenic materials
time measurement

radioactive contaminants
GS contaminants
. radioactive contaminants
RT atmospheric composition
fallout
nuclear radiation
radiation effects
radiation hazards

radioactive dating
USE radioactive age determination

∞ **radioactive debris**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT debris
fallout
radioactive materials
radioactive wastes
radiogenic materials

radioactive decay
DEF The spontaneous transformation of a nuclide into one or more nuclides accompanied by the release of radiation.
GS decay
. radioactive decay
. . alpha decay
. . neutron emission
nuclear reactions
. radioactive decay
. . alpha decay
. . neutron emission
RT emission
gamma ray beams
gamma rays
half life
hypernuclei
nuclear fission
nuclear radiation
particle decay
photoproduction
post-blast nuclear radiation
radioactivity
radiogenic materials
thermonuclear reactions
vector currents

radioactive elements
USE radioactive isotopes

radioactive isotopes
UF *radioactive elements*
radioactive nuclides
radionuclides
GS chemical elements
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . astatine isotopes
. . . . beryllium 7
. . . . beryllium 9
. . . . beryllium 10
. . . . carbon 14
. . . . cerium 137
. . . . cerium 144
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144
. . . . cobalt 58
. . . . cobalt 60
. . . . copper isotopes
. . . . gold 198
. . . . indium isotopes
. . . . iodine 125
. . . . iodine 131
. . . . iodine 132
. . . . iron 59
. . . . krypton 85
. . . . niobium 95
. . . . nitrogen 16
. . . . phosphorus 32
. . . . polonium 208
. . . . polonium 209
. . . . polonium 210
. . . . potassium 38
. . . . potassium 40
. . . . rubidium 86
. . . . sodium 22
. . . . sodium 24
. . . . strontium 85
. . . . strontium 88
. . . . strontium 89
. . . . strontium 90
. . . . transuranium elements
. . . . . americium
. . . . . americium isotopes
. . . . . americium 241
. . . . . berkelium
. . . . . californium
. . . . . californium isotopes
. . . . . curium
. . . . . curium isotopes
. . . . . curium 242
. . . . . curium 244
. . . . . einsteinium
. . . . . fermium
. . . . . lawrencium
. . . . . mendelevium
. . . . . neptunium
. . . . . neptunium isotopes
. . . . . nobelium
. . . . . plutonium
. . . . . plutonium isotopes
. . . . . plutonium 238
. . . . . plutonium 239
. . . . . plutonium 240
. . . . . plutonium 241
. . . . . plutonium 244
. . . . . sergenium
. . . . tritium
. . . . uranium 232
. . . . uranium 233
. . . . uranium 238
. . . . xenon 133
. . . . xenon 135
. . . . zirconium 95
RT actinide series
arsenic isotopes
gold isotopes
isotope effect
isotopic labeling
radiocardiography
radioisotope batteries
radiophosphors
rhenium isotopes

radioactive materials
RT actinide series
fissile fuels
fission products
fissionable materials
ionizing radiation
isotopes
∞ materials
nuclear fission
nuclear radiation
radiation hazards
radiation sources
∞ radioactive debris
radioactivity
radiobiology
radiochemistry
uranium plasmas

radioactive nuclides
USE radioactive isotopes

radioactive wastes
UF *nuclear wastes*
GS wastes
. radioactive wastes
RT contamination
decommissioning
environment pollution
environment protection

environmental surveys
fission products
hazardous material disposal (in space)
nonpoint sources
plasma core reactors
poisoning (reaction inhibition)
pollution
radiation hazards
∞ radioactive debris
radiochemistry
radiogenic materials
soil pollution
solid wastes
waste disposal

radioactivity
DEF Spontaneous disintegration of atomic nuclei with emission of corpuscular or electromagnetic radiations. The number of spontaneous disintegrations per unit mass and per unit time of a given unstable (radioactive) element, usually measured in curies.
RT ∞ activity
alpha particles
emission
fallout
fission products
gamma rays
geochemistry
geophysics
half life
ionizing radiation
nuclear radiation
particle production
post-blast nuclear radiation
∞ radiation
radiation hazards
radioactive decay
radioactive materials
radiochemistry

radiobiology
DEF The study of the effects produced on living organisms by radiation.
GS medical science
. nuclear medicine
. . radiobiology
RT antiradiation drugs
∞ biology
biomagnetism
dosimeters
health physics
immunoassay
irradiation
∞ medicine
nuclear radiation
radioactive materials
radiochemistry
radioimmunoassay

radiocardiography
DEF The technique of recording an intravenously injected radioisotope in the heart chambers.
GS bioengineering
. biometrics
. . radiocardiography
RT cardiology
radioactive isotopes

radiochemical separation
GS radiochemistry
. radiochemical separation
RT chemical reactions
quantitative analysis
∞ separation

radiochemistry
UF *reactor chemistry*
GS radiochemistry
. radiochemical separation
RT chemical analysis
∞ chemistry
ionizing radiation
isotopic labeling
nuclear chemistry
nuclear radiation
nuclear research
radioactive age determination
radioactive materials
radioactive wastes
radioactivity
radiobiology

radiogenic materials
RT nuclear reactions
radioactive age determination
∞ radioactive debris
radioactive decay
radioactive wastes
transmutation

radiogoniometers
GS measuring instruments
. goniometers
. . radiogoniometers
RT radio direction finders

radiography
UF *cinefluorography*
cineradiography
GS imagery
. radiography
. . angiography
. . autoradiography
. . neutron radiography
. . tomography
. . . computer aided tomography
. . urography
RT Bragg angle
crystallography
∞ flash
irradiation
lixiscopes
∞ materials tests
metallography
nondestructive tests
photography
pneumography
radiology
x ray analysis
x ray apparatus
x ray astronomy
x ray diffraction
x ray fluorescence
x ray imagery
x ray inspection
x ray spectroscopy
x ray telescopes
x ray tubes
x rays

radioimmunoassay
DEF A medical diagnostic procedure for the components (hormones and immunoglobulins primarily) as well as pharmaceuticals in the blood. The RIA is based on the antigen antibody reactions.
GS immunoassay
. radioimmunoassay
RT antigens
assaying
biochemistry
immunology
radiobiology

radioisotope batteries
UF *atomic batteries*
GS electric generators
. direct power generators
. . radioisotope batteries
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 11
. . . SNAP 13
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
RT electric batteries
fission electric cells
nuclear auxiliary power units
radioactive isotopes
thermionic converters
thermoelectric generators

radiology
GS medical science
. radiology
RT aerospace medicine
∞ medicine
∞ radiation
radiography
x ray analysis
x rays

radiolysis
GS chemical reactions
. photochemical reactions
. . radiolysis
decomposition
. radiolysis
dissociation
. radiolysis
radiation chemistry
. radiolysis
radiation effects
. radiolysis
RT photolysis

radiometeorographs
GS measuring instruments
. meteorological instruments
. . radiometeorographs
radio equipment
. radio transmitters
. . radiometeorographs
recording instruments
. radiometeorographs
transmitters
. radio transmitters
. . radiometeorographs
RT radio telemetry
radiosondes

radiometers
DEF Instruments for detecting and, usually, measuring radiant energy.
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . Dicke radiometers
. . . . infrared detectors
. . . . . FLIR detectors
. . . . . infrared radiometers
. . . . . Advanced Very High Resolution Radiometer
. . . . . infrared scanners

. . . . . visible infrared spin scan radiometer
. . . . microwave radiometers
. . . . . Advanced Microwave Sounding Unit
. . . . passive L-band radiometers
. . . . pressure modulator radiometers
. . . . spectroradiometers
RT bolometers
forest fire detection
horizon scanners
infrared photography
infrared tracking
Knudsen gages
photometers
pyranometers
radiometric resolution
spectrophotometers
thermistors
ultraviolet detectors
x ray detectors

radiometric correction
DEF An effort to correct the intensity range of an image. Used for radiometric rectification.
UF radiometric rectification
RT image enhancement
infrared radiometers
multispectral band scanners
vegetative index

radiometric rectification
USE radiometric correction

radiometric resolution
DEF The sensitivity of the sensor to distinguish between gray levels.
GS resolution
. radiometric resolution
RT multispectral band scanners
radiometers
remote sensors
spectral resolution

radionuclides
USE radioactive isotopes

radiopathology
GS medical science
. radiopathology
RT antiradiation drugs
nuclear medicine
radiation sickness

radiophosphors
GS phosphors
. radiophosphors
RT radioactive isotopes

radioprotective agents
USE antiradiation drugs

radiosensitivity
USE radiation tolerance

radiosondes
DEF Instruments, usually balloonborne, for the simultaneous measurement and transmission of meteorological data while moving vertically through the atmosphere.
GS measuring instruments
. meteorological instruments
. . radiosondes
. . . ionosondes
. . . rawinsondes
. sondes
. . radiosondes
. . . ionosondes
. . . rawinsondes
radio equipment
. radio transmitters
. . radiosondes
. . . ionosondes
. . . rawinsondes
transmitters
. radio transmitters
. . radiosondes
. . . ionosondes
. . . rawinsondes
RT Arcas rocket vehicles
balloon sounding
balloon-borne instruments
dropsondes
meteorological balloons
radio meteorology
radio telemetry
radiometeorographs
ROBIN balloons
satellite sounding
sounding rockets

radiotelephones
GS radio equipment
. radio transmitters
. . radiotelephones
receivers
. radiotelephones
telecommunication
. radiotelephones
telephones
. radiotelephones
transmitters
. radio transmitters
. . radiotelephones
RT echo suppressors
radio communication
telephony
voice communication

radiotherapy
USE radiation therapy

radium
GS chemical elements
. actinide series
. . radium
. . . radium isotopes
. . . . radium 226
metals
. actinide series
. . radium
. . . radium isotopes
. . . . radium 226

radium 226
GS chemical elements
. actinide series
. . radium
. . . radium isotopes
. . . . radium 226
. nuclides
. . isotopes
. . . radium isotopes
. . . . radium 226
metals
. actinide series
. . radium
. . . radium isotopes
. . . . radium 226

radium isotopes
GS chemical elements
. actinide series
. . radium
. . . radium isotopes
. . . . radium 226
. nuclides
. . isotopes
. . . radium isotopes
. . . . radium 226
metals
. actinide series
. . radium
. . . radium isotopes
. . . . radium 226

radius
USE radii

radome materials
GS dielectrics
. radome materials
RT electromagnetic wave transmission
∞ materials
radar transmission
radio transmission
radomes
transparence

radomes
DEF Dielectric housings for antennas. (From RAdar DOME. Pronounced ray-domes.)
GS housings
. radomes
shells (structural forms)
. domes (structural forms)
. . radomes
RT inflatable structures
protuberances
radant
radar antennas
radar equipment
radome materials

radon
GS chemical elements
. rare gases
. . radon
. . . radon isotopes
gases
. rare gases
. . radon
. . . radon isotopes

radon isotopes
UF thoron
GS chemical elements
. nuclides
. . isotopes
. . . radon isotopes
. rare gases
. . radon
. . . radon isotopes
gases
. rare gases
. . radon
. . . radon isotopes

Raduga satellite
DEF A Soviet communications satellite in geostationary orbit for radio and TV transmission.
GS artificial satellites
. communication satellites
. . Raduga satellite
. Soviet satellites
. . Raduga satellite

RAE 1
USE Explorer 49 satellite

RAE 2
USE Explorer 49 satellite

RAE B
USE Explorer 49 satellite

RAE-1
USE Explorer 38 satellite

rafts
GS rafts
. life rafts
RT floats
lifeboats
survival equipment

rail transportation
UF railroads
GS transportation
. rail transportation
RT automated guideway transit vehicles
automated transit vehicles
locomotives
magnetic levitation vehicles
marine transportation
rails
rapid transit systems
surface vehicles
urban transportation

railgun accelerators
DEF Linear dc motors consisting of a pair of rigid, field-producing rails, and a movable conducting armature.
RT∞ accelerators
hypervelocity guns
hypervelocity launchers
mass drivers
nuclear fusion
particle accelerators
spacecraft launching

railroad humping tests
RT cargo
impact acceleration
materials handling
shock tests
∞ tests

railroads
USE rail transportation

rails
RT rail transportation
rapid transit systems
surface vehicles

rain
GS precipitation (meteorology)
. rain
. . acid rain
RT aquifers
cloud seeding
condensation nuclei
flood predictions
hydrology
hydrology models
limnology
rainbows
raindrops
rainstorms
∞ showers
thunderstorms
watersheds

rain erosion
DEF The wearing away of the land by rain.
GS erosion
. rain erosion
RT landslides
mud
sands
soil erosion

rain forests
GS resources
. Earth resources
. . forests
. . . rain forests
RT canopies (vegetation)
geobotany
plants (botany)
∞ showers
tropical regions
vegetation

rain gages
UF *pluviographs*
GS measuring instruments
. meteorological instruments
. . rain gages

rain impact damage
GS damage
. impact damage
. . rain impact damage
RT arroyos
erosion
soil erosion
water erosion

rainbows
GS distribution (property)
. radiation distribution
. . diffraction patterns
. . . rainbows
RT halos
light transmission
rain

raindrops
GS particles
. drops (liquids)
. . raindrops
RT drop size
falling spheres
rain
rainmaking

rainmaking
GS weather modification
. rainmaking
RT climatology
cloud seeding
precipitation (meteorology)
raindrops
water resources

rainstorms
GS storms
. storms (meteorology)
. . rainstorms
. . . thunderstorms
RT acid rain
flood control
flood predictions
hailstorms
precipitation (meteorology)
rain
∞ showers
storm damage
storm enhancement
storm suppression
tornadoes

∞ **rakes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT pressure sensors
slopes

∞ **ram**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT antiradar coatings
rams (presses)
rams (pumps)

ram accelerators
(added July 1994)
UF *ramjet-in-tube accelerators*
RT∞ accelerators
detonation waves
hypervelocity guns
hypervelocity launchers
ramjet engines

RAM B launch vehicle
GS launch vehicles
. RAM B launch vehicle
rocket vehicles
. multistage rocket vehicles
. . RAM B launch vehicle
RT solid propellant rocket engines
TX-354 engine

ram effect (hydrodynamics)
USE hydrodynamic ram effect

RAM project
USE Radio Attenuation Measurement project

Raman effect
USE Raman spectra

Raman lasers
GS stimulated emission devices
. lasers
. . Raman lasers

Raman scattering
USE Raman spectra

Raman spectra
DEF Spectra of the modified frequencies resulting from inelastic scattering when matter is irradiated by a monochromatic beam of radiant energy. Used for Raman effect and Raman scattering.
UF *Raman effect*
Raman scattering
GS scattering
. wave scattering
. . electromagnetic scattering
. . . Raman spectra
spectra
. molecular spectra
. . Raman spectra
. radiation spectra
. . electromagnetic spectra
. . . Raman spectra
RT absorption spectra
emission spectra
light (visible radiation)
line spectra
molecular [illegible]
nonlinear optics
vibrational spectra

Raman spectroscopy
UF *coherent anti-Stokes Raman spectroscopy*
GS spectroscopy
. molecular spectroscopy
. . Raman spectroscopy
RT astronomical spectroscopy
infrared spectroscopy
line spectra
optogalvanic spectroscopy

Rayleigh scattering
spectroscopic analysis

ramjet engines
DEF Jet engines with no mechanical compressor consisting of specially shaped tubes or ducts open at both ends, the air necessary for combustion being shoved into the duct and compressed by the forward motion of the engine, where the air passes through a diffuser and is mixed with fuel and burned, the exhaust gases issuing in a jet from the rear opening. Ramjet engines cannot operate under static conditions. Often called ramjets. Used for athodyds.
UF athodyds
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . integral rocket ramjets
. . . . . low volume ramjet engines
. . . . . pulsejet engines
. . . . . supersonic combustion ramjet engines
. . . . . turboramjet engines
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . integral rocket ramjets
. . . . . low volume ramjet engines
. . . . . pulsejet engines
. . . . . supersonic combustion ramjet engines
. . . . . turboramjet engines
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . integral rocket ramjets
. . . . . low volume ramjet engines
. . . . . pulsejet engines
. . . . . supersonic combustion ramjet engines
. . . . . turboramjet engines
RT dump combustors
hydrogen fuels
Meteor 1 rocket vehicle
Navaho missile
ram accelerators
Saenger space transportation system
supersonic low altitude missile
turbojet engines

ramjet missiles
GS missiles
. ramjet missiles
. . Navaho missile
. . supersonic low altitude missile
RT air to air missiles
antiaircraft missiles
supersonic combustion ramjet engines
surface to air missiles
surface to surface missiles

ramjet-in-tube accelerators
USE ram accelerators

ramp functions
GS functions (mathematics)
. ramp functions
RT dynamic response
frequency response
∞ ramps
reaction time
slopes
step functions

∞ **ramps**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ramp functions
ramps (structures)

ramps (structures)
RT bridges (structures)
crossings
highways
intake systems
intersections
∞ parking
∞ ramps
slopes
wheelchairs

rams (presses)
GS presses
. rams (presses)
RT hammers
pistons
plungers
∞ ram

rams (pumps)
GS pumps
. rams (pumps)
RT plungers
∞ ram
water hammer

Ramsauer effect
RT∞ effects
electron scattering
∞ interference
negative resistance devices
rare gases
scattering cross sections

rand project
GS programs
. projects
. . rand project
RT operations research

random access
DEF The process of obtaining data from, or placing data into, storage when there is no sequential relation governing the access time to successive storage location.
RT Aloha system
computer storage devices
input/output routines
random access memory
random processes
VSAT (network)

random access memory
GS computer components
. computer storage devices
. . random access memory
. . . core storage
memory (computers)
. random access memory
. . core storage
RT random access

random distributions
USE statistical distributions

random errors
DEF Errors that are not systematic, are not erratic, and are not mistakes.
GS errors
. random errors
RT BCH codes
∞ dispersion
probability theory
quality control
sampling
stochastic processes
systematic errors

random loads
GS loads (forces)
. random loads
. . gust loads
RT contact loads
dynamic loads
impact loads
static loads
structural design criteria
transient loads
variable amplitude loading

random noise
DEF Oscillations whose instantaneous amplitudes occur, as a function of time according to a normal (Gaussian) curve. Used for Gaussian noise.
UF *Gaussian noise*
GS random noise
. random signals
RT background noise
channel noise
communication theory
electromagnetic noise
∞ noise
noise (sound)
noise generators
noise spectra
probability theory
pseudonoise
signal to noise ratios
stochastic processes
white noise

random numbers
DEF Expressions formed by sets of digits selected from a sequence of digits in which each successive digit is equally likely to be any of the digits.
RT mathematical tables
∞ numbers
pseudorandom sequences

random processes
GS stochastic processes
. random processes
. . random walk
RT communication theory
information theory
intermittency
Markov processes
Monte Carlo method
random access
statistical analysis

random sampling
DEF The process of selecting units for a sample of size n in such a manner that all combinations of n units under consideration have an equal or ascertainable chance of being selected as the sample.
GS sampling
. random sampling
RT quality control

random signals
GS random noise
. random signals
RT noise spectra

signal to noise ratios
∞ signals
stochastic processes

random variables
DEF Variables characterized by random behavior in assuming their different possible values. Mathematically, they are described by their probability distribution, which specifies the possible values of a random variable together with the probability associated (in an appropriate sense) with each value. Random variables are said to be continuous if their possible values extend over a continuum and discrete if their possible values are separated by finite intervals.
RT functions (mathematics)
Shannon–Wiener measure
∞ statistics
∞ variable

random vibration
GS vibration
. random vibration
RT bending vibration
flutter
forced vibration
lattice vibrations
linear vibration
missile vibration
noise (sound)
self induced vibration
structural vibration
torsional vibration

random walk
GS stochastic processes
. random processes
. . random walk
RT Markov chains
Monte Carlo method

∞ range
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT distance
orbital position estimation
range (extremes)
ranges (facilities)

range (extremes)
UF *extrema*
Gumbel theory
GS **range (extremes)**
. dynamic range
. frequency ranges
. . octaves
. . radio range
. . subaudible frequencies
. proportional limit
. Roche limit
RT confidence limits
constraints
distance
domains
dynamic characteristics
errors
functions (mathematics)
heterogeneity
horizon
integral equations
∞ limits
maxima
mean
minima
optimization
quality control
∞ range
sensitivity
standard deviation
statistical tests
tolerances (mechanics)
tolerances (physiology)
∞ travel
variability
variance (statistics)

range and range rate tracking
GS distance
. range and range rate tracking
radar
. range and range rate tracking
tracking (position)
. range and range rate tracking
RT Global Tracking Network
missile tracking
optical tracking
radar tracking
radio tracking
satellite tracking
STDN (network)

range control
USE **trajectory control**

range errors
SN (EXCLUDES ERRORS IN DISTANCE TRAVELED—LIMITED TO ERRORS IN DISTANCE MEASUREMENT)
DEF Errors in radar range measurement due to the propagation of radio energy through a nonhomogeneous atmosphere. These errors are due to the fact that the velocity of radio wave propagation varies with the index of refraction and that ray travel is not in straight lines through actual atmospheres. The resulting range errors are generally insignificant.
GS errors
. range errors
RT accuracy
boresight error
distance measuring equipment
error analysis
error signals

range finders
UF *range indicators*
GS measuring instruments
. distance measuring equipment
. . range finders
. . . optical range finders
. . . . laser range finders
RT altimeters
fire control
geodimeters
laser ranger/tracker
lunar rangefinding
navigation aids
position indicators
radar equipment
rangefinding
sound localization
space perception
stadimeters
telluriometers

range indicators
USE **range finders**

range measurement
USE **rangefinding**

range resources
GS resources
. Earth resources
. . range resources

range safety
GS safety
. range safety
RT aerospace safety
impact prediction
missile ranges
test ranges
trajectory control

rangefinding
UF *range measurement*
ranging
GS **rangefinding**
. airborne range and orbit determination
. lunar rangefinding
. sound ranging
RT ballistic cameras
laser ranger/tracker
Marots (ESA)
∞ measurement
radar measurement
radar tracking
radio tracking
range finders
tracking (position)

rangelands
DEF Land providing forage for domestic and wild animals, wildlife cover, recreation opportunities, and vegetation for watershed protection.
GS land
. rangelands
RT cattle
grasslands
grazing
livestock
rural areas
rural land use

Rangemaster aircraft
USE **G-1 aircraft**

Ranger 1 lunar probe
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . **Ranger 1 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . **Ranger 1 lunar probe**

Ranger 2 lunar probe
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . **Ranger 2 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . **Ranger 2 lunar probe**

Ranger 3 lunar probe
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . **Ranger 3 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . **Ranger 3 lunar probe**

Ranger 4 lunar probe
GS lunar spacecraft

. lunar probes
. . Ranger lunar probes
. . . Ranger 4 lunar probe
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . Ranger 4 lunar probe
RT Atlas Agena B launch vehicle

Ranger 5 lunar probe
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . Ranger 5 lunar probe
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . Ranger 5 lunar probe

Ranger 6 lunar probe
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . Ranger 6 lunar probe
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . Ranger 6 lunar probe

Ranger 7 lunar probe
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . Ranger 7 lunar probe
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . Ranger 7 lunar probe

Ranger 8 lunar probe
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . Ranger 8 lunar probe
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . Ranger 8 lunar probe

Ranger 9 lunar probe
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . Ranger 9 lunar probe
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . Ranger 9 lunar probe

Ranger block 3 television system
GS communication equipment
. spacecraft television
. . Ranger block 3 television system
telecommunication
. spacecraft television
. . Ranger block 3 television system
television systems
. spacecraft television
. . Ranger block 3 television system
RT∞ systems

Ranger lunar landing vehicles
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . Ranger lunar landing vehicles
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . Ranger lunar landing vehicles
RT BE-3 engine
∞ vehicles

Ranger lunar probes
UF *Ranger satellites*
GS lunar spacecraft
. lunar probes
. . Ranger lunar probes
. . . Ranger 1 lunar probe
. . . Ranger 2 lunar probe
. . . Ranger 3 lunar probe
. . . Ranger 4 lunar probe
. . . Ranger 5 lunar probe
. . . Ranger 6 lunar probe
. . . Ranger 7 lunar probe
. . . Ranger 8 lunar probe
. . . Ranger 9 lunar probe
. . . Ranger lunar landing vehicles
unmanned spacecraft
. space probes
. . lunar probes
. . . Ranger lunar probes
. . . . Ranger 1 lunar probe
. . . . Ranger 2 lunar probe
. . . . Ranger 3 lunar probe
. . . . Ranger 4 lunar probe
. . . . Ranger 5 lunar probe
. . . . Ranger 6 lunar probe
. . . . Ranger 7 lunar probe
. . . . Ranger 8 lunar probe
. . . . Ranger 9 lunar probe
. . . . Ranger lunar landing vehicles
RT Atlas Agena B launch vehicle

Ranger project
GS programs
. NASA programs
. . NASA space programs
. . . Ranger project
. . . . Agena B Ranger Program
. projects
. . Ranger project
. . . Agena B Ranger Program
. space programs
. . NASA space programs
. . . Ranger project
. . . . Agena B Ranger Program
RT Agena B rocket vehicle
Agena rocket vehicles
Atlas launch vehicles
lunar photographs
lunar photography
lunar probes

Ranger satellites
USE **Ranger lunar probes**

ranges (facilities)
GS ranges (facilities)
. test ranges
. . ballistic ranges
. . missile ranges
RT radio beacons
∞ range

ranging
USE **rangefinding**

rank tests
GS statistical analysis
. statistical tests
. . rank tests
RT∞ tests

Rankine cycle
DEF An ideal thermodynamic cycle consisting of heat addition at constant pressure, isentropic expansion, heat rejection at constant pressure, and isentropic compression; used as an ideal standard for the performance of heat-engine and heat-pump installations operating with a condensable vapor as the working fluid, such as a steam power plant.
GS cycles
. thermodynamic cycles
. . Rankine cycle
RT ASTEC solar turboelectric generator
Brayton cycle
Carnot cycle
laser propulsion
Otto cycle
solar dynamic power systems
solar generators
thermodynamics

Rankine-Hugoniot relation
RT aerothermodynamics
∞ density
pressure gradients
shock wave propagation

ranking
RT arrays
comparison
evaluation
ratings
selection
sequencing
value

Raoult law
RT composition (property)
Henry law
partial pressure
solutions
vapor pressure

RAPCON (control)
USE **radar approach control**

rapid ballistics identification
GS identifying
. rapid ballistics identification
RT display devices
imaging techniques
laser applications
lasers
measuring instruments
photography
scanning
stimulated emission
stimulated emission devices

rapid eye movement state
UF *desynchronized sleep*
REMS
RT dreams
eye movements
sleep

rapid quenching (metallurgy)
DEF Rapid cooling of molten metals or alloys to achieve maximum uniformity in the crystal structure. Used for rapid solidification.
UF *rapid solidification*
GS cooling
. quenching (cooling)

. . rapid quenching (metallurgy)
RT crystal growth
crystal lattices
crystal structure
∞ metallurgy
∞ quenching

rapid solidification
USE rapid quenching (metallurgy)
solidification

rapid transit systems
UF *high speed transportation*
GS transportation
. rapid transit systems
RT air transportation
automated guideway transit vehicles
automated transit vehicles
cargo
ground effect machines
highways
logistics
passengers
rail transportation
rails
roads
∞ systems
∞ transport vehicles
transportation networks
urban transportation

rapids
RT meanders
river basins
rivers
streams
water currents
water flow

rare earth alloys
GS alloys
. rare earth alloys
. . erbium alloys
. . gadolinium alloys
. . lanthanum alloys
. . neodymium alloys
RT yttrium alloys

rare earth compounds
GS rare earth compounds
. cerium compounds
. . bastnasite
. . cerium oxides
. dysprosium compounds
. erbium compounds
. europium compounds
. lanthanum tellurides
. lutetium compounds
. neodymium compounds
. praseodymium compounds
. samarium compounds
. scandium compounds
. . scandium oxides
. terbium compounds
. thulium compounds
. ytterbium compounds
RT ∞ chemical compounds
Group 3B compounds
∞ metal compounds

rare earth elements
UF *lanthanide series metals*
GS chemical elements
. rare earth elements
. . cerium
. . . cerium isotopes
. . . . cerium 137
. . . . cerium 144
. . dysprosium
. . . dysprosium isotopes
. . erbium
. . . erbium isotopes
. . europium
. . . europium isotopes
. . gadolinium
. . . gadolinium isotopes
. . holmium
. . . holmium isotopes
. . lanthanum
. . . lanthanum isotopes
. . lutetium
. . . lutetium isotopes
. . neodymium
. . . neodymium isotopes
. . praseodymium
. . . praseodymium isotopes
. . promethium
. . . promethium isotopes
. . samarium
. . . samarium isotopes
. . scandium
. . . scandium isotopes
. . terbium
. . . terbium isotopes
. . thulium
. . . thulium isotopes
. . ytterbium
. . . ytterbium isotopes
. . yttrium
. . . yttrium isotopes
RT alkali vapor lamps
kreep
neodymium lasers
transition metals

∞ **rare gas compounds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ chemical compounds
excimer lasers
excimers
helium compounds
xenon compounds

rare gas–halide lasers
DEF A class of lasers in which the inert gases are used as the amplifying medium.
GS stimulated emission devices
. lasers
. . gas lasers
. . . rare gas–halide lasers
. . . . krypton fluoride lasers
. . . . xenon chloride lasers
. . . . xenon fluoride lasers
RT coherent light
laser pumping
lasing
light beams
optical pumping
stimulated emission

rare gases
DEF Gases such as helium, neon, argon, krypton, xenon, and radon, all of whose shells of planetary electrons contain stable numbers of electrons so that the atoms are almost completely chemically inactive. Used for inert gases and noble gases.
UF *inert gases*
noble gases
GS chemical elements
. rare gases
. . argon
. . . argon isotopes
. . helium
. . . helium isotopes
. . . liquid helium
. . . . liquid helium 2
. . krypton
. . . krypton isotopes
. . . . krypton 85
. . neon
. . . liquid neon
. . . neon isotopes
. . radon
. . . radon isotopes
. . xenon
. . . xenon isotopes
. . . . xenon 129
. . . . xenon 133
. . . . xenon 135
gases
. rare gases
. . argon
. . . argon isotopes
. . helium
. . . helium isotopes
. . . liquid helium
. . . . liquid helium 2
. . krypton
. . . krypton isotopes
. . . . krypton 85
. . neon
. . . liquid neon
. . . neon isotopes
. . radon
. . . radon isotopes
. . xenon
. . . xenon isotopes
. . . . xenon 129
. . . . xenon 133

. . . . xenon 135
RT monatomic gases
nonpolar gases
Ramsauer effect

rarefaction
RT antinodes
compressing
elastic waves
expansion
vacuum

rarefaction waves
USE elastic waves

rarefied gas dynamics
GS fluid mechanics
. fluid dynamics
. . gas dynamics
. . . rarefied gas dynamics
RT atomic beams
BGK model
Chapman-Enskog theory
continuum flow
∞ dynamics
free molecular flow
Knudsen flow
low density flow
low density wind tunnels
molecular beams
molecular flow
plasmas (physics)
slip flow
transition flow

rarefied gases
UF *low density gases*
GS gases
. rarefied gases
. . cosmic gases
. . . interplanetary gas
. . . interstellar gas
RT electron gas
free molecular flow
gas density
gas temperature
high temperature gases
low density flow
low density research
molecular gases

rarefied plasmas
GS gases
. rarefied plasmas
particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . rarefied plasmas
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . rarefied plasmas
RT cathode glow
cold plasmas
collisionless plasmas
electron plasma
nonuniform plasmas

rasers
USE masers

raster scanning
DEF Sweeping a cathode ray screen or an antenna beam characterized by a network of parallel sweeps either from side to side or from top to bottom.
GS imaging techniques
. raster scanning
scanning
. raster scanning
RT cathode ray tubes
computer graphics
display devices
image processing
images
picture tubes
television cameras

rate meters
USE measuring instruments

rate of climb indicators
GS aircraft instruments
. rate of climb indicators
RT altimeters
flight instruments
∞ indicators

rates (per time)
GS rates (per time)
. acceleration (physics)
. . angular acceleration
. . deceleration
. . . spin reduction
. . electron acceleration
. . high acceleration
. . high gravity environments
. . impact acceleration
. . particle acceleration
. . plasma acceleration
. . transverse acceleration
. acoustic velocity
. airspeed
. angular velocity
. bit error rate
. burning rate
. collision rates
. critical velocity
. decay rates
. . electron decay rate
. drift rate
. escape velocity
. evaporation rate
. exhaust velocity
. flow velocity
. . solar wind velocity
. flux (rate)
. . heat flux
. . magnetic flux
. . solar flux
. flux density
. . current density
. . photon density
. . radiant flux density
. . . irradiance
. . . . illuminance
. . . . solar constant
. . . lumens
. . . luminous intensity
. . . . illuminance
. . . . luminance
. . . particle flux density
. . . . electron flux density
. . . . neutron flux density
. . . . proton flux density
. . . radiance
. . . radiancy
. . . solar flux density
. . . . solar constant
. . sound intensity
. . . zero sound
. ground speed
. group velocity
. heart rate
. . arrhythmia
. . bradycardia
. . tachycardia
. high speed
. hypersonic speed
. ion production rates
. landing speed
. light speed
. loading rate
. low speed
. mass flow rate
. orbital velocity
. phase velocity
. physiological acceleration
. propagation velocity
. pulse rate
. . pulse repetition rate
. radial velocity
. recombination coefficient
. relativistic velocity
. respiratory rate
. . dyspnea
. . hypoventilation
. . tachypnea
. rotor speed
. signal fading rate
. solar velocity
. star formation rate
. strain energy release rate
. strain rate
. subsonic speed
. supersonic speed
. systole
. terminal velocity
. tip speed
. transmission rate (communications)
. transonic speed
. wind velocity
. . solar wind velocity
RT access time
MTBF
solitary waves
time functions
time measurement
volume

ratings
RT assessments
consistency
evaluation
normalizing (statistics)
∞ performance
position (title)
ranking

ratiometers
GS measuring instruments
. ratiometers

rational functions
GS analysis (mathematics)
. complex variables
. . meromorphic functions
. . . rational functions
functions (mathematics)
. meromorphic functions
. . rational functions

rations
GS rations
. space rations
RT ∞ food

ratios
UF *percentage*
GS ratios
. aspect ratio
. . high aspect ratio

. . low aspect ratio
. Biot number
. bypass ratio
. compression ratio
. fiber volume fraction
. fineness ratio
. Froude number
. fuel–air ratio
. Grashof number
. Hartmann number
. hematocrit ratio
. indexes (ratios)
. . KP index
. . morphological indexes
. . vegetative index
. . . leaf area index
. isotope ratios
. Laval number
. Lewis numbers
. lift drag ratio
. likelihood ratio
. Mach number
. mass ratios
. . mass to light ratios
. . mixing ratios
. . payload mass ratio
. . propellant mass ratio
. Mills ratio
. modular ratios
. Nusselt number
. Peclet number
. pervesance
. Poisson ratio
. Prandtl number
. pressure ratio
. Rayleigh number
. Reynolds number
. . high Reynolds number
. . low Reynolds number
. Richardson number
. scale (ratio)
. Schmidt number
. signal to noise ratios
. similarity numbers
. standing wave ratios
. Stanton number
. stress ratio
. Strouhal number
. temperature ratio
. thickness ratio
. thrust–weight ratio
. void ratio
RT dynamic range
efficiency
fractals
fractions
proportion
psychological tests
refractivity

rats
GS animals
. vertebrates
. . mammals
. . . rodents
. . . . **rats**
RT mice
pocket mice

RATSCAT program
USE **radar target scatter site program**

Raven helicopter
USE **OH–23 helicopter**

ravines
GS landforms
. **ravines**
RT canyons
erosion
river basins
topography
valleys
water erosion

rawinsondes
DEF Combinations of rawob and rawin; observations of temperature, pressure, relative humidity, and winds–aloft by means of radiosonde and radio direction finding equipment of radar tracking.
GS measuring instruments
. meteorological instruments
. . radiosondes
. . . **rawinsondes**
. sondes
. . radiosondes
. . . **rawinsondes**
radio equipment
. radio transmitters
. . radiosondes
. . . **rawinsondes**
transmitters
. radio transmitters
. . radiosondes
. . . **rawinsondes**
RT dropsondes
meteorological balloons
radar tracking
radio tracking
wind measurement

ray acoustics
USE **geometrical acoustics**

ray casting
USE **ray tracing**

ray optics
USE **geometrical optics**

ray tracing
DEF A procedure used in the graphical determination of the path followed by a single ray of radiant energy as it travels through media of varying indices of refraction.
UF *ray casting*
RT diffraction
geometrical optics
geometrical theory of diffraction
gradient index optics
grazing incidence
optical measurement
reflectance
tracking (position)
transmittance

Rayleigh distribution
GS functions (mathematics)
. probability density functions
. . **Rayleigh distribution**
statistical analysis
. probability density functions
. . **Rayleigh distribution**
statistical distributions
. **Rayleigh distribution**
RT error analysis
operations research
radial distribution

Rayleigh equations
RT∞ equations
flow equations
heat transfer
thermodynamics

Rayleigh number
GS dimensionless numbers
. **Rayleigh number**
ratios
. **Rayleigh number**
RT Benard cells
buoyancy
Rayleigh–Benard convection

Rayleigh scattering
DEF Any scattering process produced by spherical particles whose radii are smaller than about one tenth the wavelength of the scattered radiation.
GS scattering
. wave scattering
. . electromagnetic scattering
. . . Mie scattering
. . . . **Rayleigh scattering**
RT airglow
gray gas
light scattering
Raman spectroscopy
sky

Rayleigh waves
DEF Two dimensional barotropic disturbances in a fluid having one or more discontinuities in the vorticity profile. Surface waves associated with the free boundary of a solid, such that a surface particle describes an ellipse whose major axis is normal to the surface and whose center is at the undisturbed surface. At maximum particle displacement away from the solid surface the motion of the particle is opposite to that of the wave.
GS elastic waves
. seismic waves
. . **Rayleigh waves**
RT barotropic flow
fluid flow
S waves
two dimensional flow

Rayleigh–Benard convection
DEF The flow of a fluid contained between horizontal thermally conducting plates and heated from below. The Rayleigh number is proportional to the temperature difference between the plates.
GS convection
. free convection
. . **Rayleigh–Benard convection**
. . . Benard cells
fluid flow
. convective flow
. . **Rayleigh–Benard convection**
. . . Benard cells
RT convection currents
convection–diffusion equation
convective heat transfer
forced convection
hot surfaces
laminar flow
Rayleigh number
solar convection (astronomy)
stellar convection
thermal boundary layer

Rayleigh–Ritz method
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Rayleigh–Ritz method**
RT∞ methodology
variational principles

rayon
DEF A manufactured fiber composed of regenerated cellulose, as well as fibers composed of regenerated cellulose in which substituents have replaced not more than 15 percent of the hydrogens of the hydroxyl groups.
GS fibers
. synthetic fibers
. . **rayon**
textiles
. **rayon**

∞ **rays**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT atmospheric radiation
background noise
beams (radiation)
caustics (optics)
coherent radiation
continuous radiation
corpuscular radiation
electromagnetic radiation
extraterrestrial radiation
gamma rays
lunar rays
polarized radiation
pulsed radiation

Raytheon computers
GS data processing equipment
. computers
. . digital computers
. . . **Raytheon computers**

razor blades
GS cutters
. blades (cutters)
. . **razor blades**

RB-47 aircraft
USE **B-47 aircraft**

RB-50 aircraft
USE **B-50 aircraft**

RB-57 aircraft
USE **B-57 aircraft**

RB-66 aircraft
USE **B-66 aircraft**

RBE
USE **relative biological effectiveness (RBE)**

RC circuits
UF *RC networks*
GS circuits
. **RC circuits**
RT capacitance
coupling circuits
discriminators
electric filters
electrical resistance
LC circuits
network analysis
network synthesis
RLC circuits
time constant
transconductance

RC networks
USE **RC circuits**

RCA computers
GS data processing equipment
. computers
. . **RCA com...**
. . . **RCA spectra 70 computer**
. . . **RCA-110 computers**
RT data processing

RCA Satcom satellites
DEF Domestic commercial communications satellites launched by NASA for the RCA Corporation.
GS artificial satellites
. communication satellites
. . **RCA Satcom satellites**
commercial spacecraft
. **RCA Satcom satellites**
RT Delta launch vehicle
domestic satellite communications systems

RCA spectra 70 computer
GS data processing equipment
. computers
. . digital computers
. . . **RCA spectra 70 computer**
. . RCA computers
. . . **RCA spectra 70 computer**

RCA-110 computers
GS data processing equipment
. computers
. . RCA computers
. . . **RCA-110 computers**

RCB stars
USE **R Coronae Borealis stars**

RDX
UF *cyclotrimethylene trinitramine*
trinitrotriazocyclohexane
GS explosives
. **RDX**
nitrogen compounds
. azo compounds
. . **RDX**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **RDX**
propellants
. **RDX**
RT pyrotechnics
solid propellants
solid rocket propellants

reactance
GS electrical properties
. electrical impedance
. . **reactance**
impedance
. electrical impedance
. . **reactance**
RT capacitance
electrical resistance
Foster theory
inductance
Smith chart
transconductance

reactance amplifiers
USE **parametric amplifiers**

reacting flow
(added August 1991)
DEF Fluid flows in which chemical reactions are occurring or potentially can occur. Used for chemically reacting flow.
UF *chemically reacting flow*
GS fluid flow
. **reacting flow**
. . combustible flow
RT boundary layer combustion
chemical reactions
combustion chemistry
detonable gas mixtures
direct numerical simulation
flame propagation
∞ flow
fuel flow
premixed flames
propellant combustion
reaction kinetics
turbulent combustion
turbulent flow

∞ **reaction**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT chemical reactions
human reactions
irritation
nuclear reactions
thrust

reaction bonding
DEF Chemical combining of ingredients to produce silicon nitride ceramics.
GS bonding
. **reaction bonding**
RT aluminum
ceramics
chemical reactions
melting points
nitrogen
oxygen
powder metallurgy
sialon
silicon
silicon nitrides
sintering

∞ **reaction control**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT chemical reaction control
∞ control
directional control
Marquardt R4D engine
nuclear reactor control
reactor safety
thrust control

reaction jet backpacks
USE **self maneuvering units**

reaction jets
USE **jet flow**
jet thrust

reaction kinetics
UF *chemical kinetics*
reaction rate
GS kinetics
. **reaction kinetics**
RT amino radical
association reactions
autocatalysis
catalysis
chemical equilibrium
chemical reactions
combustion chemistry
Damkohler number
Fischer-Tropsch process
half life
heat of dissociation
interstellar chemistry
irreversible processes
nitrous acid
nuclear reactions

pressure dependence
reacting flow
reaction–diffusion equations
reagents
solvation

reaction products
DEF The substances formed in a chemical reaction — the desired items as well as the unwanted fumes, sludge, residues, etc.
GS products
. **reaction products**
. . combustion products
RT ashes
by–products
effluents
engines
exhaust gases
fumes
gases
infrared suppression
jet engines
precipitates
residues
slags
sludge

reaction rate
USE **reaction kinetics**

reaction time
DEF In human engineering, the interval between an input signal (physiological) or a stimulus (psychophysiological) and the response elicited by the signal. Used for reverse time.
UF *reverse time*
GS time
. **reaction time**
. . chronaxy
RT adaptation
conditioned reflexes
dynamic characteristics
dynamic response
human reactions
perceptual time constant
physiological effects
pontryagin principle
psychological effects
psychomotor performance
ramp functions
reflexes
refractory period
sensitivity
sensorimotor performance
step functions
time constant
time lag

reaction wheels
UF *inertia wheels*
GS wheels
. **reaction wheels**
RT attitude control
counter–rotating wheels
flywheels

reaction–diffusion equations
(added July 1994)
RT combustion physics
convection–diffusion equation
diffusion coefficient
∞ equations
Ficks equation
partial differential equations
reaction kinetics
transport theory

reactivity
DEF The ability to react. For proper use of the term, the reaction in question and the conditions should be stated and the parameter used in measuring reactivity indicated, such as rate, uniformity, or the like.
GS **reactivity**
. photoreactivity
RT chemical reactions
inhour equation
nuclear reactions

reactor chemistry
USE **radiochemistry**

reactor cores
DEF In nuclear reactors, the regions containing the fissionable material.
GS cores
. **reactor cores**
RT annular core pulse reactors
control rods
nuclear fuel elements
nuclear fuels
nuclear reactors
∞ operators
plasma core reactors
reflectometers
reflectors
void ratio

reactor design
RT annular core pulse reactors
blankets (fission reactors)
blankets (fusion reactors)
chemical reactors
computer aided design
∞ design
engine design
engineering test reactors
Hanford reactors
high temperature nuclear reactors
limiters (fusion reactors)
nuclear reactors
nuclear research and test reactors
offshore reactor sites
organic cooled reactors
pebble bed reactors
product development

reactor fuels
USE **nuclear fuels**

reactor in flight test program
USE **RIFT (reactor in flight test)**

reactor materials
RT annular core pulse reactors
blankets (fission reactors)
blankets (fusion reactors)
chemical reactors
∞ construction materials
coolants
limiters (fusion reactors)
loss of coolant
∞ materials
moderators
nuclear fuel elements
nuclear fuels
nuclear reactors
pressure vessels
radiation shielding
spent fuels

reactor physics
GS nuclear physics
. **reactor physics**
RT annular core pulse reactors
beta factor
Hanford reactors
inhour equation
nuclear fuel burnup
nuclear reactors
∞ physics
∞ science

reactor safety
DEF Theoretical and experimental investigations of the behavior of reactor types and designs under various real or hypothetical accidents.
GS safety
. **reactor safety**
RT annular core pulse reactors
chemical reactors
control rods
explosions
industrial safety
nuclear reactor control
nuclear reactors
offshore reactor sites
radiation hazards
∞ reaction control
relief valves
Transient Reactor Test Facility

reactor startup tests
GS fuel tests
. **reactor startup tests**
RT initiation
nuclear fuels
nuclear reactors
starting
∞ tests

reactor technology
GS technologies
. **reactor technology**
RT annular core pulse reactors
∞ engineering
engineering test reactors
Hanford reactors
high temperature nuclear reactors
Joint European Torus
nuclear fuel burnup
nuclear reactors
nuclear research and test reactors
offshore reactor sites
organic cooled reactors
pebble bed reactors
reverse field pinch

∞ **reactors**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT annular core pulse reactors
chemical reactors
electric reactors
fast test reactors
fusion reactors
fusion–fission hybrid reactors
high temperature nuclear reactors
molten salt nuclear reactors
nuclear reactors
nuclear research and test reactors
plasma core reactors
power reactors
RIFT (reactor in flight test)
SNAPTRAN reactor
spheromaks
swimming pool reactors
thermal reactors

tokamak devices
water cooled reactors

read–only memory devices
DEF Computer devices for storing data in permanent or nonerasable form. Used for ROM devices.
UF *ROM devices*
GS computer components
. computer storage devices
. . **read–only memory devices**
. . . CD–ROM
RT computer design
computer systems design
computers

readers
UF *reading machines*
RT character recognition
conical scanning
∞ detectors
magnetic tapes
microfilms
optical data processing
optical scanners
pattern recognition
punched cards
punched tapes
reading

reading
GS **reading**
. lip reading
RT character recognition
conical scanning
data transmission
display devices
input
∞ interpretation
legibility
perception
printing
readers
scanners
scanning
symbols
visibility

reading machines
USE **readers**

readjustment
USE **adjusting**

readout
RT display devices
multiple output programs
output
printers (data processing)
printouts
remote consoles

reagents
RT catalysts
chemical analysis
chemical reactions
reaction kinetics

real gases
GS **gases**
. **real gases**
RT equations of state
gas density
ideal gas
kinetic theory
molecular gases
monatomic gases

real numbers
GS **real numbers**
. integers
RT complex numbers
∞ numbers

real time operation
DEF Time in which reporting on events or recording of events is simultaneous with the events.
RT automatic control
computer programming
computers
display devices
integrated mission control center
multiprocessing (computers)
onboard data processing
windows (computer programs)

real variables
GS analysis (mathematics)
. **real variables**
. . Abel function
. . asymptotes
. . Bessel functions
. . . Hankel functions
. . Bethe–Salpeter equation
. . calculus of variations
. . composite functions
. . delta function
. . differential equations
. . . Blasius equation
. . . Chandrasekhar equation
. . . cosine series
. . . Duffing differential equation
. . . Falkner–Skan equation
. . . hyperbolic differential equations
. . . Lame wave equations
. . . partial differential equations
. . . . biharmonic equations
. . . . Burger equation
. . . . Cauchy–Riemann equations
. . . . elliptic differential equations
. . . . . Monge–Ampere equation
. . . . Euler–Cauchy equations
. . . . Fokker–Planck equation
. . . . Gauss equation
. . . . Helmholtz vorticity equation
. . . . Liouville equations
. . . . parabolic differential equations
. . . . Poisson equation
. . . . vlasov equations
. . . Riccati equation
. . . vorticity equations
. . . . Helmholtz vorticity equation
. . Einstein equations
. . existence theorems
. . extremum values
. . . limits (mathematics)
. . . maxima
. . . minima
. . . . Cramer–Rao bounds
. . Fourier–Bessel transformations
. . Green's functions
. . hyperbolic functions
. . hyperplanes
. . Jacobi integral
. . Jacobi matrix method
. . kernel functions
. . Liapunov functions
. . linear equations
. . . linear evolution equations
. . . Riccati equation
. . Lipschitz condition
. . measure and integration
. . . binary integration
. . . Borel sets
. . . functional integration
. . . integral calculus
. . . J integral
. . . Lebesgue theorem
. . . numerical integration
. . . . Runge–Kutta method
. . . Stieltjes integral
. . . weighting functions
. . Neumann problem
. . nonlinear equations
. . . cubic equations
. . . Duffing differential equation
. . . Monge–Ampere equation
. . . nonlinear evolution equations
. . . quadratic equations
. . . quartic equations
. . numerical differentiation
. . periodic functions
. . . trigonometric functions
. . . . cosine series
. . . . sine series
. . . . tangents
. . series (mathematics)
. . . asymptotic series
. . . Campbell–Hausdorff series
. . . cosine series
. . . Fourier series
. . . Pade approximation
. . . power series
. . . . Taylor series
. . . . . MacLaurin series
. . . progressions
. . . Prony series
. . . sine series
. . Sturm–Liouville theory
. . vector analysis
. . . collinearity
. . . coplanarity
. . . curl (vectors)
. . . . vorticity
. . Weierstrass functions
. . Whittaker functions
RT aperiodic functions
calculus
Cholesky factorization
complex variables
continuums
dependent variables
differential calculus
factorization
Fourier analysis
Hermitian polynomial
hyperspheres
infinity
inflection points
maximum principle
monotone functions
Schmidt method
stability derivatives
uniqueness theorem
∞ variable

rearward facing steps
USE **backward facing steps**

reattached flow
GS fluid flow
. viscous flow
. . boundary layer flow
. . . **reattached flow**
RT ∞ attachment
backward facing steps
boundary layer separation
Coanda effect
Crocco–Lee theory
flow characteristics
flow distribution

separated flow

reattachment
USE **attachment**

REB
USE **relativistic electron beams**

rebreathing
RT air purification
carbon dioxide concentration
carbon dioxide removal
expired air
life support systems
spacecraft cabin atmospheres

receivers
DEF Initial components or sensing elements of measuring systems. For example, the receiver of a thermoelectric thermometer is the measuring thermocouple. Instruments used to detect the presence and to determine the information carried by electromagnetic radiation. Receivers include circuits designed to detect, amplify, rectify, and shape the incoming radio frequency signals received at the antenna in such a manner that the information containing component of the received energy can be delivered to the desired indicating of recording equipment. Used for receiving systems.
UF *receiving systems*
GS **receivers**
. linear receivers
. logarithmic receivers
. radar receivers
. radio receivers
. . superheterodyne receivers
. . transmitter receivers
. . whistler recorders
. radiotelephones
. television receivers
RT amplifiers
∞ detectors
display devices
duplexers
electric filters
instrument receivers
∞ receiving
repeaters
tanks (containers)
teleprinters
teletypewriters
transmitters

∞ **receiving**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *reception*
RT acquisition
collection
delivery
procurement
radar reception
radio reception
receivers
recognition
signal reception
television reception

receiving systems
USE **receivers**

receptacles (containers)
USE **containers**

reception
USE **receiving**

reception diversity
UF *space diversity*
GS radio equipment
. reception diversity
RT fading
radio antennas
radio receivers
radio reception
signal fading

receptors (physiology)
DEF Sensory nerve endings or organs in a living organism that is sensitive to physical or chemical stimuli.
GS **receptors (physiology)**
. baroreceptors
. chemoreceptors
. gravireceptors
. . otolith organs
. mechanoreceptors
. photoreceptors
. proprioceptors
. thermoreceptors
RT sense organs
sensitometry

recesses
RT cavities
crevasses
∞ hollow

recession
RT ∞ depression
economics

recharging
DEF The restoring of discharged electric storage batteries to a charged condition by passing direct current through them in a direction opposite to that of the discharging current.
RT charge efficiency

reciprocal theorems
GS theorems
. reciprocal theorems
RT angles (geometry)
geometry
lines (geometry)
points (mathematics)
projective geometry

reciprocating engines
USE **piston engines**

reciprocation
RT cycles
mechanical oscillators
piston engines
pistons

reciprocity theorem
DEF Any theorem expressing reciprocal relations for the behavior of some physical system in which input and output can be interchanged without altering the response of the system to a given excitation.
GS theorems
. reciprocity theorem
RT acoustic scattering
electromagnetic fields
electromagnetic scattering
wave scattering

recirculation
USE **circulation**

recirculative fluid flow
GS fluid flow
. recirculative fluid flow
RT backward facing steps
boundary layer flow
boundary layer separation
reversed flow
turbulent flow
turbulent mixing
vortices

reclamation
GS reclamation
. materials recovery
. . gas recovery
. . nuclear fuel reprocessing
. . solvolysis
. . water reclamation
RT oil recovery
∞ recovery
recycling
regeneration (engineering)
waste management

recognition
DEF The psychological process in which an observer so interprets the visual or auditory stimuli he receives from a distant object that he forms a correct conclusion as to the exact nature of that object or sound.
GS **recognition**
. pattern recognition
. . character recognition
. . graphology
. speech recognition
. target recognition
. timber identification
RT acquisition
consciousness
crop identification
identifying
IFF systems (identification)
∞ interpretation
memory
∞ receiving
remote sensing

recoil atoms
GS atoms
. recoil atoms
RT recollings

recoil ions
GS ions
. recoil ions
RT atomic collisions
charge exchange
electron scattering
ion impact
ion production rates
ion scattering
ionic collisions
recollings

recoil protons
GS particles
. charged particles
. . protons
. . . recoil protons
. elementary particles
. . fermions
. . . protons
. . . . recoil protons
RT baryons
recollings

recollings
RT collisions
particle motion
recoil atoms

recoil ions
recoil protons

recombinant DNA
USE deoxyribonucleic acid

recombination coefficient
DEF A measure of the specific rate at which oppositely charged ions join to form neutral particles (a measure of ion recombination).
GS coefficients
. recombination coefficient
rates (per time)
. recombination coefficient
RT free electrons
ion recombination
ionized gases

recombination reactions
GS recombination reactions
. atomic recombination
. . oxygen recombination
. electron recombination
. . radiative recombination
. electron–ion recombination
. . radiative recombination
. hydrogen recombinations
. ion recombination
RT atomic collisions
capture effect
fertilization
Suhi effect

recommendations
GS recommendations
. suggestion
RT decision theory
general overviews

recompression
USE compressing

reconnaissance
GS reconnaissance
. aerial reconnaissance
. . Airborne Integrated Reconnaissance System
. photoreconnaissance
. spectral reconnaissance
RT COSPAS
Earth resources
observation
patrols
photogeology
SarSat
searching
space observations (from Earth)
space surveillance (spaceborne)
surveillance
surveys
terrain analysis

reconnaissance aircraft
GS reconnaissance aircraft
. A–9 aircraft
. Breguet 1150 aircraft
. Cessna L–19 aircraft
. HS–801 aircraft
. SR–71 aircraft
. TSR–2 aircraft
. U–2 aircraft
. Victor MK–1 aircraft
. weather reconnaissance aircraft
RT aerial reconnaissance
∞ aircraft
antisubmarine warfare aircraft
Earth Resources Survey aircraft
flying platforms
jet aircraft
light aircraft
∞ military aircraft
∞ military aviation
military helicopters
observation aircraft
pilotless aircraft
submersible aircraft
supersonic aircraft
utility aircraft
V/STOL aircraft
Valiant aircraft
water takeoff and landing aircraft
YF–12 aircraft

reconnaissance spacecraft
GS military spacecraft
. reconnaissance spacecraft
. . Inspector satellite
. . Midas satellites
. . . Midas 2 satellite
. . . Midas 3 satellite
. . . Midas 4 satellite
. . . Midas 5 satellite
. . . Midas 6 satellite
. . . Midas 7 satellite
. . photo reconnaissance spacecraft
. . Samos
RT aerial reconnaissance
artificial satellites
manned orbital laboratories
manned spacecraft
unmanned spacecraft

reconstruction
GS reconstruction
. wave front reconstruction
RT construction
restoration

∞ **recorders**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cable force recorders
data recorders
playbacks
recording instruments
registers (computers)
tape recorders
VLF emission recorders

recording
GS recording
. data recording
. data smoothing
. magnetic recording
. photographic recording
. prediction recording
RT playbacks
plotting
privacy
∞ storage

recording heads
RT data recording
magnetic recording
magnetic tapes
recording instruments
tape recorders
video equipment

recording instruments
UF *emissographs*
pluviographs
thermograms
GS recording instruments
. bathythermographs
. cable force recorders
. flight recorders
. . flight load recorders
. force vector recorders
. mechanograms
. oscillographs
. plotters
. . x–y plotters
. pressure recorders
. radiometeorographs
. seismographs
. . lunar seismographs
. tape recorders
. . video tape recorders
. weather data recorders
. whistler recorders
RT aircraft instruments
automatic control
bubble technique
control equipment
counters
data recorders
electronic recording systems
flight instruments
graphs (charts)
indicating instruments
instrument receivers
instrument transmitters
∞ instruments
measuring instruments
meteorological instruments
∞ pens
photographic recording
∞ recorders
recording heads
sonograms
sphygmography
transducers
VLF emission recorders

records
GS documents
. records
. . video disks
RT case histories
∞ data
data processing
data recording
documentation
∞ drawing
format
histories
periodicals
playbacks
Presidential reports
privacy
records management
reports
supplements
technical writing
∞ tests
texts

records management
(added August 1989)
GS management
. information management
. . records management
RT data management
information resources management
information systems
management information systems
records

recoverability
RT damage assessment
∞ properties
∞ recovery

recoverable launch vehicles
GS launch vehicles
. **recoverable launch vehicles**
RT booster recovery
launch vehicle configurations
multiengine vehicles
∞ recovery
recovery parachutes
reusable launch vehicles
∞ vehicles
∞ winged vehicles
X-33 reusable launch vehicle
X-34 reusable launch vehicle

recoverable satellites
USE **recoverable spacecraft**

recoverable spacecraft
UF *recoverable satellites*
GS reentry vehicles
. **recoverable spacecraft**
. . Apollo spacecraft
. . . Apollo lunar experiment module
. . Astro vehicle
. . Gemini B spacecraft
. . Gemini spacecraft
. . . Gemini 2 spacecraft
. . . Gemini (GT-1) spacecraft
. . Mercury spacecraft
. . . Aurora 7
. . . Faith 7
. . . Friendship 7
. . . SIGMA 7
. . reusable spacecraft
. . . aerospace planes
. . . . HOPE aerospace plane
. . . . HOTOL launch vehicle
. . . . X-30 vehicle
. . . MARS (Manned Reusable Spacecraft)
. . . single stage to orbit vehicles
. . . . Delta Clipper
. . . . HOTOL launch vehicle
. . . space shuttles
. . . . Buran space shuttle
. . . . Hermes manned spaceplane
. . . . Space Shuttle orbiters
. . . . . Atlantis (orbiter)
. . . . . Challenger (Orbiter)
. . . . . Columbia (Orbiter)
. . . . . Discovery (Orbiter)
. . . . . Endeavour (orbiter)
. . . . . Enterprise (Orbiter)
. . voskhod manned spacecraft
. . . Voskhod 1 spacecraft
. . . Voskhod 2 spacecraft
. . Vostok spacecraft
. . . Vostok 1 spacecraft
. . . Vostok 2 spacecraft
. . . Vostok 3 spacecraft
. . . Vostok 4 spacecraft
. . . Vostok 5 spacecraft
. . . Vostok 6 spacecraft
RT booster rocket engines
boostglide vehicles
expendable stages (spacecraft)
hypersonic vehicles
inertial Upper Stage
interim stages (spacecraft)
lifting reentry vehicles
maneuverable spacecraft
manned spacecraft
military spacecraft
rendezvous spacecraft
space capsules
∞ spacecraft
spacecraft recovery
unmanned spacecraft
∞ winged vehicles

∞ **recovery**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT booster recovery
gas recovery
loop transfer recovery
materials recovery
nuclear fuel reprocessing
oil recovery
pressure recovery
reclamation
recoverability
recoverable launch vehicles
recovery parachutes
retrieval
reuse
spacecraft recovery
stress relaxation
stress relieving
visual discrimination

recovery parachutes
GS parachutes
. **recovery parachutes**
RT booster recovery
Discoverer recovery capsules
recoverable launch vehicles
∞ recovery
ribbon parachutes
spacecraft recovery

recovery vehicles
SN (EXCLUDES RECOVERABLE VEHICLES)
GS **recovery vehicles**
. Assured Crew Return Vehicle
. X-38 crew return vehicle
RT helicopters
∞ military vehicles
trucks
∞ vehicles

recovery zones
RT downrange
landing sites
reentry range
regions
spacecraft recovery

recreation
RT morale
parks
relaxation (physiology)
rest
Starsite program
urban planning
urban research

recrystallization
DEF In metals, the change from one crystal structure to another, as occurs on heating or cooling through a critical temperature. The formation of a new strain free grain structure from that existing in cold worked metal, usually accomplished by heating.
GS crystallization
. **recrystallization**
RT annealing
heat treatment
laser annealing
∞ metallurgy
nucleation
polygonization
∞ separation

rectangles
GS geometry
. Euclidean geometry
. . polygons
. . . tetragons
. . . . **rectangles**
RT rectangular planforms

rectangular beams
GS structural members
. beams (supports)
. . **rectangular beams**
RT box beams

rectangular coordinates
USE **Cartesian coordinates**

rectangular drainage
USE **drainage patterns**

rectangular panels
GS panels
. **rectangular panels**
planforms
. rectangular planforms
. . **rectangular panels**
RT strakes
structural members
wing panels

rectangular planforms
GS planforms
. **rectangular planforms**
. . rectangular panels
. . rectangular plates
. . rectangular wings
RT rectangles
wing planforms

rectangular plates
GS plates
. rectangular planforms
. **rectangular plates**
structural members
. plates (structural members)
. . **rectangular plates**
RT flat plates
metal plates
∞ plates

rectangular waveguides
GS waveguides
. **rectangular waveguides**
RT beam waveguides
microwave filters

rectangular wind tunnels
GS test facilities
. wind tunnels
. . **rectangular wind tunnels**
RT subsonic wind tunnels

rectangular wings
UF *straight wings*
GS airfoils
. wings
. . unswept wings
. . . **rectangular wings**
planforms
. rectangular planforms
. . **rectangular wings**

rectennas
DEF Devices that convert microwave energy into direct-current power by utilizing a number of small diodes each with its own diode rectifier. Used for rectifier antennas.
UF *rectifier antennas*
GS antennas

. radio antennas
. . microwave antennas
. . . rectennas
microwave equipment
. microwave antennas
. . rectennas
radio equipment
. radio antennas
. . microwave antennas
. . . rectennas
RT satellite power transmission
solar radiation
spacetennas

rectification
GS **rectification**
. geometric rectification (imagery)
RT ∞ condensation
distillation
purification
refining

rectifier antennas
USE **rectennas**

rectifiers
SN (EXCLUDES PHOTOGRAPHIC RECTIFIER)
DEF Static devices having an asymmetrical conduction characteristic which is used to convert attending current into direct current.
GS **rectifiers**
. avalanche diodes
. . cryosar
. crystal rectifiers
. germanium diodes
. ignitrons
. thyratrons
. thyristors
. . silicon controlled rectifiers
RT Barritt diodes
current converters (AC to DC)
diodes
electron tubes
∞ energy sources
form factors
ITO (semiconductors)
mercury arcs
metal oxide semiconductors
∞ power supplies
power supply circuits
semiconductor devices
solid state devices
thin films

rectum
GS anatomy
. digestive system
. . gastrointestinal system
. . . intestines
. . . . rectum

recuperators
USE **regenerators**

recursion formulas
USE **recursive functions**

recursive functions
UF *recursion formulas*
GS functions (mathematics)
. recursive functions
RT FIR filters
LISP (programming language)
strange attractors

recycling
RT economy
extraction
materials recovery
nuclear fuel reprocessing
∞ processing
reclamation
refining
resources
solvolysis
spent fuels
waste management

red arcs
GS atmospheric radiation
. auroras
. . auroral arcs
. . . red arcs
RT ∞ arcs
auroral ionization

red blood cells
USE **erythrocytes**

red dwarf stars
DEF Red stars of low luminosity, so designated by E. Hertzsprung. Red Dwarf stars are commonly those main sequence stars fainter than an absolute magnitude of plus 1, and are the faintest and coolest of the dwarfs.
GS celestial bodies
. stars
. . main sequence stars
. . . dwarf stars
. . . . red dwarf stars
RT hot stars
late stars
stellar luminosity
stellar magnitude
subdwarf stars
supernova remnants
white dwarf stars

red giant stars
DEF Stars whose evolution has progressed to the point where hydrogen core burning has been completed, the helium core has become denser and hotter than originally, and the envelope has expanded to perhaps 100 times its initial size.
GS celestial bodies
. stars
. . giant stars
. . . red giant stars
. . . . carbon stars
RT asymptotic giant branch stars
late stars
M stars
Mira variables
S stars
stellar evolution
stellar luminosity

Red Sea
GS seas
. Red Sea
RT Africa
Asia

red shift
DEF In astronomy, the displacement of observed spectral lines toward the longer wavelengths of the red end of the spectrum.
RT cosmology
Doppler effect
Doppler–Fizeau effect
galaxies
Hubble constant
Hubble diagram
irregular galaxies
radial velocity

red tide
RT fishes
marine environments
microorganisms
oceanography
plankton
sea water
toxicology

Redeye missile
GS missiles
. antiaircraft missiles
. . Redeye missile
. surface to air missiles
. . Redeye missile
RT solid propellant rocket engines

Redox cells
DEF Cells for converting the energy of reactants to electrical energy; an intermediate reductant in the form of liquid electrolyte reacts at the anode in a conventional manner and is regenerated by reaction with a primary fuel.
GS electrochemical cells
. electric batteries
. . Redox cells
RT electrochemistry
electrolytes
energy conversion efficiency
energy storage

reduced gravity
USE **microgravity**

reduced instruction set computing
USE **RISC processors**

reduced order filters
GS linear filters
. reduced order filters
RT electric filters
∞ filters
Kalman filters
navigation aids

∞ **reduction**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *decrementing*
diminution
shortening
RT attenuation
cleaning
comminution
contraction
damping
data reduction
deceleration
decontamination
demagnetization
deoxygenation
depletion
depolarization
dilution
dimming
dispersing
dissipation
drag reduction
elimination
friction reduction
hydrogenolysis
∞ inhibition
iodimetry
leakage
metal working
noise reduction
optimization
pressure reduction

prevention
purification
reduction (chemistry)
refining
relaxation (mechanics)
removal
retarding
shrinkage
sidelobe reduction
spin reduction
stopping
tapering

reduction (chemistry)
GS chemical reactions
. **reduction (chemistry)**
. . deoxidizing
. . hydrogenation
RT ∞ chemistry
dehydrogenation
electrodeposition
electrolysis
metal powder
oxidation
oxidation–reduction reactions
purification
∞ reduction
roasting
smelting
trichloroethylene

reduction (mathematics)
USE **optimization**

redundancy
DEF The existence of more than one means of accomplishing a given task, where all means must fail before there is an overall failure of the system.
RT assurance
communication theory
computer program integrity
correction
error detection codes
information theory
reliability

redundancy encoding
GS coding
. **redundancy encoding**
RT concatenated codes
data transmission
error correcting codes
error correcting devices
error detection codes
Reed–Solomon codes
repetition
signal encoding

redundant components
UF *redundant structures*
RT backups
∞ components
reliability
spare parts
∞ structures

redundant structures
USE **redundant components**

Reed–Solomon codes
(added June 1992)
UF *RS codes*
GS error correcting codes
. **Reed–Solomon codes**
RT bit error rate
∞ codes
coding
concatenated codes
decoders
redundancy encoding
signal encoding

reeds (plants)
GS plants (botany)
. grasses
. . **reeds (plants)**

reefs
DEF Chains of rocks, sand ridges, or coral at or near the surface of water.
GS landforms
. barriers (landforms)
. . **reefs**
RT atolls
bars (landforms)
coral reefs
island arcs
islands
oceanography
rocks
sands
shallow water
∞ shelves
shoals

reels
RT cables (ropes)
∞ containers
magnetic tapes
spools
tethered balloons
tethered satellites
tethering

reentry
DEF The event occurring when a spacecraft or other object comes back into the sensible atmosphere after going to higher altitudes; the action involved in this event.
GS atmospheric entry
. **reentry**
. . hyperbolic reentry
. . hypersonic reentry
. . . uncontrolled reentry (spacecraft)
. . manned reentry
. . spacecraft reentry
. . . uncontrolled reentry (spacecraft)
RT ablation
aerodynamic heating
aerodynamic stability
aerodynamics
aerothermodynamics
descent
descent trajectories
∞ entry
flight paths
impact prediction
lifting reentry vehicles
low observable reentry vehicles
missiles
∞ rockets
space flight
terminal guidance

reentry bodies
USE **reentry vehicles**

reentry breakup
USE **spacecraft breakup**

reentry communication
GS telecommunication
. space communication
. . spacecraft communication
. . . **reentry communication**
RT blackout (propagation)
manned reentry
plasma sheaths
radio communication
voice communication

reentry decoys
GS countermeasures
. **reentry decoys**
decoys
. **reentry decoys**
reentry vehicles
. **reentry decoys**
RT ballistic missile decoys
missile defense

reentry effects
RT ablation
aerodynamic heating
blackout (propagation)
∞ effects
hypersonic reentry
plasma sheaths
spacecraft breakup
temperature effects

reentry gliders
USE **lifting reentry vehicles**

reentry guidance
GS guidance (motion)
. **reentry guidance**
RT automatic control
descent trajectories
inertial guidance
manual control
satellite guidance
spacecraft guidance
terminal guidance

reentry physics
RT ablation
aerothermochemistry
aerothermodynamics
hypersonic reentry
low observable reentry vehicles
∞ physics
plasma sheaths
∞ science

reentry range
GS distance
. **reentry range**
RT missile ranges
recovery zones

reentry shielding
GS shielding
. heat shielding
. . **reentry shielding**
RT ablation
ablative nose cones
aerodynamic heating
aerothermochemistry
heat sinks
∞ insulated structures
Ludox (trademark)
nose cones
reusable heat shielding
spacecraft shielding
thermal control coatings
thermal insulation
thermal protection

reentry trajectories
DEF Those parts of rocket trajectories that begin at reentry and end at target or at the surface.
GS trajectories
. descent trajectories
. . reentry trajectories
RT circumlunar trajectories
flight mechanics
hyperbolic reentry
missile trajectories
moon–Earth trajectories
spacecraft trajectories
terminal guidance

reentry vehicles
DEF Any payload carrying vehicles designed to leave the sensible atmosphere and then return through it to Earth. Used for reentry bodies.
UF *reentry bodies*
GS reentry vehicles
. boostglide vehicles
. . X–20 aircraft
. low observable reentry vehicles
. maneuverable reentry bodies
. . lifting reentry vehicles
. . . FDL–5 reentry vehicle
. . . HL–10 reentry vehicle
. . . HLD–35 reentry vehicle
. . . Janus spacecraft
. . . M–2 lifting body
. . . . M–2F2 lifting body
. . . X–20 aircraft
. . . X–24 aircraft
. Mark 1 reentry body
. Mark 2 reentry body
. Mark 3 reentry body
. Mark 4 reentry body
. Mark 5 reentry body
. Mark 6 reentry body
. Mark 11 reentry body
. Mark 12 reentry body
. Mark 17 reentry body
. recoverable spacecraft
. . Apollo spacecraft
. . . Apollo lunar experiment module
. . Astro vehicle
. . Gemini B spacecraft
. . Gemini spacecraft
. . . Gemini 2 spacecraft
. . . Gemini (GT–1) spacecraft
. . Mercury spacecraft
. . . Aurora 7
. . . Faith 7
. . . Friendship 7
. . . SIGMA 7
. . reusable spacecraft
. . . aerospace planes
. . . . HOPE aerospace plane
. . . . HOTOL launch vehicle
. . . . X–30 vehicle
. . . MARS (Manned Reusable Spacecraft)
. . . single stage to orbit vehicles
. . . . Delta Clipper
. . . . HOTOL launch vehicle
. . . space shuttles
. . . . Buran space shuttle
. . . . Hermes manned spaceplane
. . . . Space Shuttle orbiters
. . . . . Atlantis (orbiter)
. . . . . Challenger (Orbiter)
. . . . . Columbia (Orbiter)
. . . . . Discovery (Orbiter)
. . . . . Endeavour (orbiter)
. . . . . Enterprise (Orbiter)
. . voskhod manned spacecraft
. . . Voskhod 1 spacecraft
. . . Voskhod 2 spacecraft
. . Vostok spacecraft
. . . Vostok 1 spacecraft
. . . Vostok 2 spacecraft
. . . Vostok 3 spacecraft
. . . Vostok 4 spacecraft
. . . Vostok 5 spacecraft
. . . Vostok 6 spacecraft
. reentry decoys
. Trailblazer 1 reentry vehicle
. Trailblazer 2 reentry vehicle
. X–17 reentry vehicle
RT ablative nose cones
aerothermochemistry
Athena rocket vehicle
∞ ballistic vehicles
bluff bodies
∞ bodies
ferry spacecraft
∞ flight vehicles
hypersonic vehicles
∞ insulated structures
landing modules
lifting bodies
maneuverable spacecraft
missiles
nose cones
pyramidal bodies
∞ rockets
space capsules
∞ spacecraft
spacecraft configurations
terminal guidance
test vehicles
∞ vehicles
∞ winged vehicles

reference atmospheres
UF *standard atmospheres*
GS models
. atmospheric models
. . reference atmospheres
standards
. reference atmospheres

reference stars
GS celestial bodies
. stars
. . reference stars
RT astronomical coordinates
astronomical photography
celestial navigation
laser guide stars
navigation aids
space navigation

∞ **reference systems**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bibliographies
celestial reference systems
coordinates
documentation
indexes (documentation)
inertial reference systems
libraries
spherical coordinates
∞ systems
Wiswesser notations

references (standards)
USE **standards**

refilling
GS filling
. refilling
RT ∞ loading
replenishment

refining
GS refining
. electrorefining
. electroslag refining
RT alkylation
beneficiation
chemical fractionation
clean fuels
cleaning
∞ conversion
crystallization
desulfurizing
dewaxing
distillation
drop transfer
energy policy
enrichment
extraction
fractionation
hydrogenation
hydrometallurgy
isomerization
materials recovery
polymerization
∞ processing
purification
pyrometallurgy
rectification
recycling
∞ reduction
∞ separation
smelting
sublimation
upgrading
zone melting

reflectance
DEF The ratio of the radiant flux reflected by a body to that incident upon it. Used for reflection coefficient and reflectivity.
UF *reflection coefficient*
reflectivity
GS electromagnetic properties
. optical properties
. . reflectance
. . . bidirectional reflectance
. . . spectral reflectance
RT absorptance
albedo
attenuation coefficients
birefringence
bistatic reflectivity
brightness
coarseness
cosmic ray albedo
Earth albedo
flow coefficients
geometrical theory of diffraction
luster
optical measurement
optical reflection
photometry
ray tracing
reflection
reflectometers
surface properties
surface roughness effects
transmittance
vegetative index

reflected radiation
USE **reflected waves**

reflected rays
USE **reflected waves**

reflected waves
DEF Shock waves, expansion waves, or compression waves reflected by another wave incident upon a wall or other boundary. In electronics, radio waves reflected from a surface or object. Used for reflected radiation and reflected rays.
UF *reflected radiation*
reflected rays
RT corpuscular radiation
elastic waves
electromagnetic radiation
incident radiation
optical reflection
photon beams
∞ radiation
refracted waves
retroreflection
wave reflection

reflecting telescopes
DEF Telescopes which collect light by means of concave mirrors.
GS telescopes
. **reflecting telescopes**
. . Large Deployable Reflector
. . Starsat telescope
RT Cassegrain optics
honeycomb mirrors
mirrors
optical equipment
optical measuring instruments
paraboloid mirrors
reflectors
Schmidt telescopes
segmented mirrors
spectroscopic telescopes
stratoscope telescopes

reflection
DEF The process whereby a surface of discontinuity turns back a portion of the incident radiation into the medium through which the radiation approached.
GS **reflection**
. infrared reflection
. optical reflection
. retroreflection
. signal reflection
. specular reflection
. spread reflection
. ultraviolet reflection
. wave reflection
. . Mach reflection
RT bidirectional reflectance
Brewster angle
deflection
diffusion
echelette gratings
echelle gratings
electromagnetic absorption
electromagnetic radiation
impingement
Lambert surface
light (visible radiation)
∞ optics
reflectance
refraction
scattering
transmission
zero sound

reflection coefficient
USE **reflectance**

reflection nebulae
DEF Any celestial body having a hazy cloudy appearance whose brightness results from the scattering by dust particles of light from nearby stars.
GS celestial bodies
. nebulae
. . **reflection nebulae**
RT cosmic dust
interstellar matter
light scattering

reflectivity
USE **reflectance**

reflectometers
DEF Instruments for measuring reflectance.
GS measuring instruments
. optical measuring instruments
. . **reflectometers**
. . . microwave reflectometers
optical equipment
. optical measuring instruments
. . **reflectometers**
. . . microwave reflectometers
RT comparators
directors (antenna elements)
optical measurement
photometers
reactor cores
reflectance
reflector antennas
Schelkunoff principle
two reflector antennas
ultraviolet reflection

reflector antennas
DEF Antennas consisting of one or more reflecting surfaces and a radiating (receiving) feed system.
GS antennas
. directional antennas
. . **reflector antennas**
. . . parabolic antennas
. . . two reflector antennas
RT antenna feeds
antenna radiation patterns
Cassegrain antennas
microwave antennas
multibeam antennas
parabolic reflectors
radar antennas
radar corner reflectors
radar reflectors
radio antennas
reflectometers
reflectors
subreflectors

reflector satellites
USE **passive satellites**

reflectors
GS **reflectors**
. Fresnel reflectors
. parabolic reflectors
. . paraboloid mirrors
. radar reflectors
. . radar corner reflectors
. retroreflectors
. solar reflectors
. . solar collectors
. . solettas
. Bragg reflectors
. wiggler magnets
RT antennas
attenuators
baffles
ceilings (architecture)
deflectors
directors (antenna elements)
etalons
heliostats
Large Deployable Reflector
mirrors
parasitic elements (antennas)
plasma core reactors
radiation shielding
reactor cores
reflecting telescopes
reflector antennas
Schelkunoff principle
subreflectors
telescopes
two reflector antennas

reflexes
GS **reflexes**
. carotid sinus reflex
. conditioned reflexes
. respiratory reflexes
. . cough
. . Hering–Breuer reflex
. . sneezing
. vestibular nystagmus
RT deconditioning
reaction time
vasoconstriction
vasodilation

reforestation
DEF The reestablishment of a tree crop on forest land.
GS management
. resources management
. . forest management
. . . **reforestation**
RT forests
timber inventory

refracted radiation
USE **refracted waves**

refracted rays
USE **refracted waves**

refracted waves
DEF Waves that have had their direction of motion changed by refraction. Used for refracted radiation and refracted rays.
UF *refracted radiation*
refracted rays
RT corpuscular radiation
eikonal equation
elastic waves
electromagnetic radiation
incident radiation
photon beams
reflected waves
refraction
∞ waves

refracting telescopes
DEF Telescopes which collect light by means of a lens or system of lenses.
GS telescopes
. **refracting telescopes**
RT lenses
optical equipment
optical measuring instruments
spectroscopic telescopes
stratoscope telescopes

refraction
DEF The process in which the direction of energy propagation is changed as the result of a

change within the propagating medium, or as the energy passes through the interface representing a density discontinuity between the two media. In the first instance, the rays undergo a smooth bending over a finite distance. In the second case, the index of refraction changes through an interfacial layer that is thin compared to the wavelength of the radiation; thus, the refraction is abrupt, essentially discontinuous.

GS **refraction**
. atmospheric refraction
. . radio wave refraction
. birefringence
. . Kerr electrooptical effect
RT asphericity
astigmatism
∞ conduction
deflection
diffraction
distortion
divergence
Huygens principle
isochromatics
lenses
light (visible radiation)
photoelasticity
prisms
reflection
refracted waves
refractivity
sinking
Snells law
transmission
Voigt effect
wave dispersion
wave propagation

refractive index
USE **refractivity**

refractivity
UF *refractive index*
GS electromagnetic properties
. optical properties
. . **refractivity**
. . . photorefractivity
RT atmospheric refraction
birefringence
birefringent coatings
birefringent filters
Brewster angle
gradient index optics
isotropism
light (visible radiation)
opacity
optical thickness
polarization (waves)
ratios
refraction
refractometers
Snells law
underwater optics

refractometers
DEF Instruments for measuring the index of refraction of a liquid, gas, or solid.
GS measuring instruments
. optical measuring instruments
. . **refractometers**
optical equipment
. optical measuring instruments
. . **refractometers**
RT goniometers
optical measurement
refractivity

refractories
GS refractory materials
. **refractories**
RT ceramics
cermets
combustion chambers
forsterite
furnaces
hearths
mortars (material)
refractory coatings
rocket engines
rocket linings
thermal insulation
turbines

refractory coatings
DEF Pyrolytic materials used for coating other materials exposed to high temperatures.
GS coatings
. protective coatings
. . **refractory coatings**
RT ceramics
pyrolytic materials
refractories
thermal insulation

refractory materials
UF *high melting compounds*
high temperature materials
pyrographalloy
GS **refractory materials**
. Ludox (trademark)
. porcelain
. refractories
. refractory metal alloys
. . molybdenum alloys
. . . Rene 41
. . . Rene 63
. . . Rene 77
. . . Rene 95
. . niobium alloys
. . osmium alloys
. . rhenium alloys
. . tantalum alloys
. . tungsten alloys
. refractory metals
. . chromium
. . . chromium isotopes
. . iridium
. . . iridium isotopes
. . molybdenum
. . niobium
. . . niobium isotopes
. . . . niobium 95
. . osmium
. . . osmium isotopes
. . rhenium
. . . rhenium isotopes
. . tantalum
. . . tantalum isotopes
. . tungsten
. . tungsten isotopes
RT ablative materials
carbides
Carborundum (trademark)
ceramics
cermets
∞ chemical compounds
clays
high temperature research
∞ inorganic materials
∞ materials
∞ metal compounds
nonflammable materials
nozzle walls
pyrolytic materials
Scotchlite (trademark)
sialon

refractory metal alloys
GS alloys
. heat resistant alloys
. . **refractory metal alloys**
. . . molybdenum alloys
. . . . Rene 41
. . . . Rene 63
. . . . Rene 77
. . . . Rene 95
. . . niobium alloys
. . . osmium alloys
. . . rhenium alloys
. . . tantalum alloys
. . . tungsten alloys
refractory materials
. **refractory metal alloys**
. . molybdenum alloys
. . . Rene 41
. . . Rene 63
. . . Rene 77
. . . Rene 95
. . niobium alloys
. . osmium alloys
. . rhenium alloys
. . tantalum alloys
. . tungsten alloys

refractory metals
DEF Usually alloys of high-melting point, hard-to-work metals, but can also refer to certain unalloyed elements.
GS metals
. **refractory metals**
. . chromium
. . . chromium isotopes
. . iridium
. . . iridium isotopes
. . molybdenum
. . niobium
. . . niobium isotopes
. . . . niobium 95
. . osmium
. . . osmium isotopes
. . rhenium
. . . rhenium isotopes
. . tantalum
. . . tantalum isotopes
. . tungsten
. . tungsten isotopes
refractory materials
. **refractory metals**
. . chromium
. . . chromium isotopes
. . iridium
. . . iridium isotopes
. . molybdenum
. . niobium
. . . niobium isotopes
. . . . niobium 95
. . osmium
. . . osmium isotopes
. . rhenium
. . . rhenium isotopes
. . tantalum
. . . tantalum isotopes
. . tungsten
. . tungsten isotopes
RT heat resistant alloys
transition metals

refractory period
RT reaction time
∞ relaxation

responses
time lag

Refrasil (trademark)
USE **fibers**
silicon dioxide

refrigerants
RT absorbers (materials)
absorption cooling
air conditioning
ammonia
brines
coolants
cooling systems
fluorohydrocarbons
freon
ice
refrigerating
refrigerating machinery
refrigerators
solid nitrogen

refrigerating
RT air conditioning
air cooling
cold traps
condensing
coolers
cooling
cooling systems
cryogenic cooling
cryogenic equipment
cryogenics
defrosting
dehumidification
freezing
freon
frozen foods
humidity
low temperature
magnetic cooling
preserving
refrigerants
refrigerators
temperature
temperature control
temperature distribution
thermoelectric cooling
ventilation

refrigerating machinery
GS **refrigerating machinery**
. refrigerators
RT absorbers (equipment)
air conditioning
air conditioning equipment
blowers
compressors
condensers (liquefiers)
coolers
cooling systems
cryogenic equipment
evaporators
heat pumps
∞ machinery
refrigerants
temperature control
thermoelectric cooling

refrigerators
GS refrigerating machinery
. **refrigerators**
RT coolers
defrosting
refrigerants
refrigerating

Refsat
DEF A proposed satellite that broadcasts navigation aiding signals to low cost user terminals which employ the constellation of 24 NavStar Global Positioning System (GPS) satellites for position determination.
GS artificial satellites
. navigation satellites
. . **Refsat**
RT NAVSTAR satellites
synchronous satellites

refueling
UF *fueling*
GS **refueling**
. air to air refueling
RT aircraft hazards
flight operations
fuel consumption
fuel contamination
fuel control
fuel systems
ground support equipment
preflight operations
propellant transfer
replenishment
retractable equipment

∞ **regeneration**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT regeneration (engineering)
regeneration (physiology)

regeneration (engineering)
UF *regenerative cycles*
RT ∞ generation
positive feedback
reclamation
∞ regeneration

regeneration (physiology)
UF *bioregeneration*
RT physiology
∞ **regeneration**

regenerative cooling
DEF The cooling of a part of an engine by the fuel or propellant being delivered to the combustion chamber; specifically, the cooling of a rocket engine combustion chamber or nozzle by circulating the fuel or oxidizer, or both, around the part to be cooled.
GS cooling
. **regenerative cooling**
RT heat exchangers
precooling
regenerators

regenerative cycles
USE **regeneration (engineering)**

regenerative feedback
USE **positive feedback**

regenerative fuel cells
GS electric generators
. direct power generators
. . fuel cells
. . . **regenerative fuel cells**
electrochemical cells
. fuel cells
. . **regenerative fuel cells**
RT biochemical fuel cells
phosphoric acid fuel cells
storage batteries

regenerators
DEF Devices used in a thermodynamic process for capturing and returning to the process heat that would otherwise be lost. Used for recuperators.
UF *recuperators*
GS **regenerators**
. thermosiphons
RT energy storage
heat exchangers
heat sinks
regenerative cooling
tube heat exchangers

Regge poles
RT angular momentum
∞ poles
Pomeranchuk theorem
pomerons
scattering cross sections

regimes
RT communities
culture (social sciences)
environments
governments
nations
politics

regional planning
GS planning
. **regional planning**
. . urban planning
RT conservation
farmlands
forest management
forests
harbors
highways
industrial areas
lakes
land management
megalopolises
parks
residential areas
rural areas
rural land use
St Louis–Kansas City Corridor (MO)
suburban areas
urban development
urban transportation

regions
UF *zones*
GS **regions**
. auroral zones
. Brillouin zones
. Central America
. Central Atlantic Region (US)
. Central Europe
. D region
. E region
. . E-1 layer
. . E-2 layer
. . sporadic E layer
. equatorial regions
. F region
. . F 1 region
. . F 2 region
. Fresnel region
. Great Basin (US)
. Great Plains Corridor (North America)
. Gutenberg zone
. habitats
. lumbar region
. M region
. Middle East

. New England (US)
. null zones
. Pacific Northwest (US)
. Panama Canal Zone
. pelagic zone
. polar regions
. . Antarctic regions
. . . McMurdo sound
. . . Ross ice shelf
. . Arctic regions
. . . subarctic regions
. remote regions
. . Antarctic regions
. . . McMurdo sound
. . . Ross ice shelf
. . Arctic regions
. . . subarctic regions
. Sand Hills Region (GA–NC–SC)
. Sand Hills Region (NE)
. sciatic region
. Southeast Asia
. Southern California
. Southern Yemen
. temperate regions
. tropical regions
. . Amazon region (South America)
. . intertropical convergent zones
RT asteroid belts
∞ belts
boundaries
Earth ionosphere
∞ layers
recovery zones
∞ sectors
sites

∞ **registers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT registers (air circulation)
registers (computers)

registers (air circulation)
RT cooling systems
∞ registers

registers (computers)
DEF Devices capable of retaining information, often that contained in a small subset (e.g., one word) of the aggregate information in a digital computer.
GS computer components
. computer storage devices
. . **registers (computers)**
. . . accumulators (computers)
RT central processing units
∞ recorders
∞ registers
shift registers

regolith
DEF The layer rock or blanket or unconsolidated rocky debris of any thickness that overlies bedrock and forms the surface of the land.
GS rocks
. **regolith**
RT basalt
bedrock
breccia
carbonaceous rocks
coal
core–mantle boundary
Earth mantle
Earth resources
enstatite
geology
igneous rocks
lavs
lithology
lunar geology
lunar mantle
lunar rocks
magma
olivine
peridotite
pyroxenes
rock intrusions
selenology
stratigraphy

regression (statistics)
USE **regression analysis**

regression analysis
DEF The statistical counterpart or analog of the functional expression, in ordinary mathematics, of one variable in terms of others.
UF *regression (statistics)*
GS statistical analysis
. variance (statistics)
. . multivariate statistical analysis
. . . **regression analysis**
. . . . regression coefficients
RT autoregressive moving average
autoregressive processes
clumps
correlation
covariance
experiment design
factor analysis
forecasting
least squares method
quality control
significance
statistical tests
variability

regression coefficients
GS coefficients
. **regression coefficients**
statistical analysis
. variance (statistics)
. . multivariate statistical analysis
. . . regression analysis
. . . . **regression coefficients**
RT correlation
forecasting
mathematical models
quality control

regularity
RT continuity (mathematics)
convergence
irregularities
∞ normalizing
∞ patterns
periodic variations
physiology
∞ properties
trend analysis

regulation
USE **control**

regulations
RT air law
allowances
∞ control
copyrights
crime
law (jurisprudence)
liabilities
licensing
patent policy
penalties
police
policies
procurement policy
prohibition
rules

regulators
SN (LIMITED TO DEVICES)
GS control equipment
. **regulators**
. . automatic control valves
. . . pressure regulators
. . . relief valves
. . cryostats
. . current regulators
. . flow regulators
. . . fuel flow regulators
. . oxygen regulators
. . speed regulators
. . thermostats
. . voltage regulators
RT actuators
automatic control
∞ control
controllers
gibberellins
speed control

regulatory mechanisms (biology)
SN (RESTRICTED TO THE REGULATION OF PHYSIOLOGICAL AND PHYSIOCHEMICAL PROCESSES—EXCLUDES ECOLOGICAL, GENETIC, OR BIOTECHNOLOGICAL REGULATION)
DEF Specific processes by which living organisms control the rates of biochemical and physiological reactions involved in processes such as metabolism and cellular differentiation.
RT biocontrol systems
calmodulin
∞ control
hormones
thermoregulation

Regulus missile
GS missiles
. surface to surface missiles
. . **Regulus missile**
RT solid propellant rocket engines
turbojet engines

reheating
USE **heating**

reignition
USE **ignition**

reinforced plastics
DEF Plastics with some strength properties greatly superior to those of the base resin, resulting from the presence of high-strength fillers imbedded in the composition. Note: The reinforcing fillers are usually fibers, fabrics, or mats made of fibers. The plastic laminates are the most common and strongest.
GS composite materials
. polymer matrix composites
. . **reinforced plastics**
. . . carbon fiber reinforced plastics
. . . . carbon–phenolic composites
. . . glass fiber reinforced plastics
. . . micarta
plastics
. **reinforced plastics**
. . carbon fiber reinforced plastics
. . . carbon–phenolic composites
. . glass fiber reinforced plastics
. . micarta
RT aircraft survivability

aramid fiber composites
aramid fibers
boron fibers
boron reinforced materials
fiber composites
graphite–epoxy composites
hybrid composites
laminates
reinforcement (structures)
thermosetting resins

reinforced plates
GS structural members
. plates (structural members)
. . **reinforced plates**
RT anisotropic plates
corrugated plates
laminates
plastic plates
reinforcement (structures)

reinforced shells
GS shells (structural forms)
. **reinforced shells**
RT anisotropic shells
corrugated shells
cylindrical shells
fluid filled shells
hemispherical shells
liquid filled shells
metal shells
orthotropic shells
plastic shells
reinforcement (structures)
reinforcement rings
shell stability
spherical shells
thin walled shells
toroidal shells
wind tunnel walls

∞ **reinforcement**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT reinforcement (psychology)
reinforcement (structures)

reinforcement (psychology)
GS **reinforcement (psychology)**
. reward (psychology)
RT learning
motivation
∞ reinforcement
self stimulation

reinforcement (structures)
RT bulkheads
composite materials
fillers
longerons
reinforced plastics
reinforced plates
reinforced shells
∞ reinforcement
reinforcement rings
ribs (supports)
rigid structures
ring structures
stiffening
strakes
stringers
structural members
structural stability
structural strain
supports
thick walls
wire
wire cloth

reinforcement rings
GS ring structures
. **reinforcement rings**
RT reinforced shells
reinforcement (structures)
ribs (supports)
∞ rings

reinforcing fibers
GS fibers
. **reinforcing fibers**
. . aramid fibers
. . . Kevlar (trademark)
. . boron fibers
. . carbon fibers
RT boron reinforced materials
braided composites
carbon fiber reinforced plastics
carbon–carbon composites
ceramic fibers
ceramic matrix composites
composite materials
Dacron (trademark)
debonding (materials)
fiber composites
fiber orientation
fiber pullout
fiber volume fraction
fiber–matrix interfaces
glass fiber reinforced plastics
glass fibers
graphite–epoxy composites
hybrid composites
lay–up
metal fibers
metal matrix composites
micromechanics
reinforcing materials
resin transfer molding
superhybrid materials
synthetic fibers
whisker composites
woven composites

reinforcing materials
DEF Fibers, filaments, fabrics, and other substances used for strengthening of matrices in composite materials.
RT aramid fibers
composite materials
fabrics
fiber composites
fibers
∞ filaments
∞ materials
matrix materials
particulate reinforced composites
reinforcing fibers

Reissner theory
RT plates (structural members)
stress analysis
∞ theories

Reissner–Nordstrom solution
DEF The unique solution of general relativity theory describing a nonrotating, charged black hole.
RT astronomical models
black holes (astronomy)
charged particles
gravitational effects
relativity

rejection
RT acceptability
elimination
evaluation
exclusion
removal
selection

relational data bases
(added June 1997)
GS data bases
. **relational data bases**
RT architecture (computers)
computer systems design
data base management systems
data management
data retrieval

∞ **relationships**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *interrelationships*
RT approximation
duality theorem
homology
stress–strain relationships

relative biological effectiveness (RBE)
UF *RBE*
GS biological effects
. **relative biological effectiveness (RBE)**
RT ∞ biology
physiological effects

relativistic effects
RT Bose–Einstein condensates
dimensions
∞ effects
gravitational lenses
mass
relativity
time
velocity

relativistic electron beams
DEF Beams of electrons traveling at approximately the speed of light. Used for REB.
UF *REB*
GS beams (radiation)
. particle beams
. . electron beams
. . . **relativistic electron beams**
particles
. charged particles
. . energetic particles
. . . electrons
. . . . high energy electrons
. . . . . **relativistic electron beams**
. corpuscular radiation
. . electron radiation
. . . electron beams
. . . . **relativistic electron beams**
. . energetic particles
. . . electrons
. . . . high energy electrons
. . . . . **relativistic electron beams**
. elementary particles
. . fermions
. . . leptons
. . . . electrons
. . . . . high energy electrons
. . . . . **relativistic electron beams**
. relativistic particles
. . **relativistic electron beams**
RT beam plasma amplifiers
beta particles
controlled fusion
diffraction radiation

RT electron bombardment
electron scattering
inertial fusion (reactor)
ionizing radiation
plasma heating
plasma jets
plasma–particle interactions

relativistic particles
DEF Particles with a velocity so large that their relativistic mass exceeds their rest mass by an amount which is significant for the computation or other considerations at hand.
GS particles
. **relativistic particles**
. . relativistic electron beams
RT Hamilton–Jacobi equation

relativistic plasmas
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **relativistic plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **relativistic plasmas**
RT Astron thermonuclear reactor
bremsstrahlung
cosmic plasma
electron plasma
electron–positron plasmas
gravitational collapse
high temperature plasmas
pinch effect
plasma jets
plasma radiation
plasma–particle interactions
ponderomotive forces

relativistic theory
UF *Wightman theory*
RT∞ theories

relativistic velocity
DEF A velocity sufficiently high that some properties of a particle of this velocity have values significantly different from those obtaining when the particle is at rest.
GS rates (per time)
. **relativistic velocity**
velocity
. **relativistic velocity**
RT high speed
∞ hypervelocity
light speed
particle motion

relativity
DEF A principle that postulates the equivalence of the description of the universe, in terms of physical laws, by various observers, or for various frames of reference. Used for geometrodynamics and space–time continuum.
UF *geometrodynamics*
space–time continuum
RT big bang cosmology
continuums
differential geometry
event horizon
field theory (physics)
grand unified theory
gravitational lenses
Gravity Probe B
inertial reference systems
light–cone expansion
Lorentz contraction
naked singularities
nonrelativistic mechanics
paradoxes
ponderomotive forces
quantum mechanics
Reissner–Nordstrom solution
relativistic effects
Schwarzschild metric
space–time functions
string theory
supergravity
tensor analysis
unified field theory

∞ **relaxation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cross relaxation
molecular relaxation
refractory period
relaxation (mechanics)
relaxation (physiology)
relaxation method (mathematics)

relaxation (mechanics)
GS **relaxation (mechanics)**
. spin–lattice relaxation
. stress relaxation
RT∞ equilibrium
expansion
magnetic relaxation
molecular relaxation
nuclear relaxation
∞ reduction
∞ relaxation
relaxation method (mathematics)
relaxation time
residual stress
strain energy release rate
viscoelasticity
viscoplasticity

relaxation (physiology)
RT compressibility effects
massaging
recreation
∞ relaxation
work–rest cycle

relaxation method (mathematics)
DEF An iterative numerical method for solving elliptic partial differential equations, e.g., a Poisson equation.
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **relaxation method (mathematics)**
RT computational fluid dynamics
∞ methodology
∞ relaxation
relaxation (mechanics)

relaxation oscillators
GS oscillators
. **relaxation oscillators**
. . phantastrons

relaxation time
DEF In general, the time required for a system, object, or fluid to recover to a specified condition or value after disturbance. Specifically, the time taken by an exponentially decaying quantity to decrease in amplitude by a factor of 1/e = 0.3679.
GS time
. **relaxation time**
RT∞ equilibrium
excitation
Maxwell bodies
molecular relaxation
relaxation (mechanics)
spin–lattice relaxation
time constant

∞ **relay**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT disconnect devices
electric contacts
electric relays
logic circuits
radio relay systems
repeaters

Relay 1 satellite
GS artificial satellites
. communication satellites
. . Relay satellites
. . . **Relay 1 satellite**

Relay 2 satellite
GS artificial satellites
. communication satellites
. . Relay satellites
. . . **Relay 2 satellite**

Relay satellites
GS artificial satellites
. communication satellites
. . **Relay satellites**
. . . Relay 1 satellite
. . . Relay 2 satellite
RT Advent Project
Thor Delta launch vehicle
transoceanic communication

releasing
GS releasing
. fiber pullout
RT decoupling
∞ discharge
disconnect devices
dispersing
dumping
ejection
emission
emptying
exhaust emission
materials handling
relieving
scattering
spilling
unloading
venting

reliability
DEF Of a piece of equipment or a system, the probability of specified performance for a given period of time when used in the specified manner.
GS **reliability**
. aircraft reliability
. circuit reliability
. component reliability
. software reliability
. . computer program integrity
. spacecraft reliability
. structural reliability
RT acceptability
accuracy
aircraft survivability
allowances
assurance
censored data (mathematics)
computer systems performance
confidence
confidence limits

consistency
cumulative damage
∞ design
design analysis
downtime
durability
dynamic characteristics
errors
estimates
expectation
failure analysis
forecasting
maintainability
maintenance
maximum likelihood estimates
mechanical properties
missile design
MTBF
nondestructive tests
∞ performance
performance prediction
precision
prelaunch problems
probability theory
product development
production management
productivity
quality
quality control
redundancy
redundant components
risk
safety factors
sampling
specifications
stability
standards
statistical analysis
statistical distributions
statistical tests
∞ statistics
system effectiveness
systems compatibility
systems engineering
∞ tests
tolerances (mechanics)
total quality management
validity
variability
vulnerability

reliability analysis
RT ∞ analyzing
design analysis
performance prediction
software reliability
trend analysis

reliability control
USE **quality control**
reliability engineering

reliability engineering
DEF The engineering discipline which formulates an acceptable combination of design features, repair philosophy, and maintenance resources to achieve a specified level of reliability as an operational requirement, at optimum life cycle costs.
UF *reliability control*
RT complex systems
concurrent engineering
∞ engineering
fault detection
fault tolerance
performance prediction
quality control
sneak circuit analysis
system effectiveness
system identification
systems compatibility
systems engineering
total quality management
value engineering

relic radiation
DEF Background radiation resulting from the primordial big bang.
RT **astronomy**
astrophysics
background radiation
big bang cosmology
extraterrestrial radiation
∞ radiation
universe

relief maps
GS maps
. **relief maps**
RT hypsography
photogrammetry
photomaps
topography

relief valves
GS control equipment
. regulators
. . automatic control valves
. . . **relief valves**
valves
. automatic control valves
. . **relief valves**
RT automatic control
bypasses
fuel tank presaurization
fuel valves
gas valves
hydraulic equipment
pressure regulators
reactor safety
venting
vents

relieving
GS **relieving**
. stress relieving
RT ∞ discharge
exhausting
purging
releasing

relocation
RT installing
positioning
replacing

reluctance
DEF The ratio of the magnetomotive force to the magnetic flux through any cross section of the magnetic circuit.
UF *reluctivity*
GS magnetic properties
. **reluctance**
RT magnetic permeability
magnetoresistivity

reluctivity
USE **reluctance**

remagnetization
USE **magnetization**

remanence
DEF The magnetic flux density which remains in a magnetic circuit after the removal of an applied magnetomotive force. Also called retentivity.
GS magnetic properties
. **remanence**
RT flux density
paleomagnetism

remelting
USE **melting**

remodulation
RT demodulation
intermodulation
modulation

remote consoles
GS computer components
. peripheral equipment (computers)
. . **remote consoles**
consoles
. **remote consoles**
data processing equipment
. peripheral equipment (computers)
. . **remote consoles**
RT computer components
computer graphics
data links
data processing terminals
display devices
plotters
readout

remote control
DEF Control of an operation from a distance, especially by means of electricity or electronics; a controlling switch, lever, or other device used in this kind of control. Used for electromagnetic control.
UF *electromagnetic control*
GS **remote control**
. radio control
RT aircraft control
antiradiation missiles
attitude control
automatic control
∞ automation
cascade control
∞ control
control boards
controllers
digital command systems
dynamic characteristics
electric control
electronic control
engine control
flight control
ground based control
guidance (motion)
hydraulic control
∞ instruments
Kalman–Schmidt filtering
manipulators
manual control
missile control
optical control
pneumatic control
remote manipulator system
rocket engine control
satellite control
servocontrol
servomechanisms
spacecraft control
teleoperators
telerobotics
temperature control
turbojet engine control
visual control

remote handling
UF *telechirics*
GS materials handling
. **remote handling**
RT manipulators
payload deployment & retrieval system
teleoperators

remote manipulator system
DEF Devices used in space for deploying and retrieving payloads by remote control; also used for space maintenance and/or servicing of satellites and other spacecraft.
GS manipulators
. **remote manipulator system**
payload deployment & retrieval system
. **remote manipulator system**
RT payload retrieval (STS)
remote control
space maintenance
space transportation system
∞ systems

remote regions
GS regions
. **remote regions**
. . Antarctic regions
. . . McMurdo sound
. . . Ross ice shelf
. . Arctic regions
. . . subarctic regions
RT deserts
Mojave Desert (CA)
offshore reactor sites
Sahara Desert (Africa)
wilderness

remote sensing
DEF The collection of information about an object by a recording device that is not in physical contact with it. The term is usually restricted to mean methods that record reflected or radiated electromagnetic energy, rather than methods that involve significant penetration into the Earth. The technique employs such devices as cameras, infrared detectors, microwave frequency receivers, and radar systems.
GS detection
. **remote sensing**
RT aeromagnetism
airborne radar
band ratioing
change detection
cluster analysis
Coastal Zone Color Scanner
desertification
differential absorption lidar
DMSP satellites
Earth Observing System (EOS)
Earth resources
EOS data and information system
Feature Identification and Location Exper
FIRE (climatology)
geographic distribution
geographic information systems
image analysis
image classification
imaging spectrometers
in situ measurement
ISCCP Project
Landsat 6
Landsat 7
leaf area index
low earth orbits
Mapsat
Mission to Planet Earth
multisensor applications
multisensor fusion
Multispectral Resource Sampler
OSTA-3 payload
pixels
planetary geology
plant stress
Priroda module
recognition
Shuttle Imaging Radar
small satellite technology
space station polar platforms
swath width
thematic mappers (LANDSAT)
vegetative index

remote sensors
GS remote sensors
. thematic mappers (LANDSAT)
RT Advanced Microwave Sounding Unit
Advanced Very High Resolution Radiometer
AgRISTARS project
airborne lasers
airborne radar
automatic weather stations
Coastal Zone Color Scanner
crop identification
crop inventories
data acquisition
data collection platforms
∞ detectors
Earth resources
Earthnet
EROS (satellites)
Feature Identification and Location Exper
geographic applications program
haze detection
image classification
imaging radar
measuring instruments
multisensor applications
ocean color scanner
∞ probes
radiometric resolution
satellite-borne instruments
∞ sensors
spaceborne lasers
transducers
wildlife radiolocation

remotely piloted vehicles
UF *RPV*
RT∞ aircraft
DAST program
drone aircraft
highly maneuverable aircraft
Jindivik target aircraft
oblique wings
orbital maneuvering vehicles
pilotless aircraft
target drone aircraft
VATOL aircraft
∞ vehicles

removal
GS removal
. carbon dioxide removal
. paint removal
RT anodic stripping
cancellation
clearing
deletion
depletion
disposal
dissipation
ejection
emptying
evacuating (transportation)
evacuating (vacuum)
exhausting
expulsion
extraction
materials recovery
∞ reduction
rejection
∞ separation
unloading
wear

REMS
USE **rapid eye movement state**

renal calculi
USE **calculi**

renal function
RT∞ functions
glomerulus
kidneys

rendezvous
DEF The event of two or more objects meeting with zero relative velocity at a preconceived time and place. The point in space at which such an event takes place, or is to take place.
GS rendezvous
. space rendezvous
. . orbital rendezvous
. . . Earth orbital rendezvous
. . . lunar orbital rendezvous
RT Apollo Soyuz test project
flight mechanics
interception
orbital mechanics

rendezvous guidance
GS guidance (motion)
. **rendezvous guidance**
RT Automated Transfer Vehicle
command guidance
homing devices
injection guidance
midcourse guidance
orbital rendezvous
satellite guidance
spacecraft guidance
terminal guidance

rendezvous spacecraft
GS maneuverable spacecraft
. **rendezvous spacecraft**
RT Columbus space station
command guidance
ferry spacecraft
interplanetary spacecraft
lunar spacecraft
manned spacecraft
military spacecraft
orbital rendezvous
recoverable spacecraft
space capsules
space stations
spacecrew transfer
unmanned spacecraft

rendezvous trajectories
GS trajectories
. **rendezvous trajectories**
RT ascent trajectories
circumlunar trajectories
Earth orbital rendezvous
Earth-Moon trajectories

flight mechanics
interplanetary trajectories
Near Earth Asteroid Rendezvous Mission
orbital mechanics
orbital rendezvous
Rosetta mission
space rendezvous
spacecraft docking
spacecraft trajectories

Rene 41
GS alloys
. chromium alloys
. . **Rene 41**
. cobalt alloys
. . **Rene 41**
. heat resistant alloys
. . refractory metal alloys
. . . molybdenum alloys
. . . . **Rene 41**
. nickel alloys
. . **Rene 41**
refractory materials
. refractory metal alloys
. . molybdenum alloys
. . . **Rene 41**
RT wrought alloys

Rene 63
GS alloys
. chromium alloys
. . **Rene 63**
. cobalt alloys
. . **Rene 63**
. heat resistant alloys
. . refractory metal alloys
. . . molybdenum alloys
. . . . **Rene 63**
. nickel alloys
. . **Rene 63**
refractory materials
. refractory metal alloys
. . molybdenum alloys
. . . **Rene 63**
RT wrought alloys

Rene 77
GS alloys
. chromium alloys
. . **Rene 77**
. cobalt alloys
. . **Rene 77**
. heat resistant alloys
. . refractory metal alloys
. . . molybdenum alloys
. . . . **Rene 77**
. nickel alloys
. . **Rene 77**
refractory materials
. refractory metal alloys
. . molybdenum alloys
. . . **Rene 77**
RT wrought alloys

Rene 95
DEF High-strength nickel-base superalloy.
GS alloys
. chromium alloys
. . **Rene 95**
. cobalt alloys
. . **Rene 95**
. heat resistant alloys
. . refractory metal alloys
. . . molybdenum alloys
. . . . **Rene 95**
. nickel alloys
. . **Rene 95**
refractory materials
. refractory metal alloys
. . molybdenum alloys
. . . **Rene 95**

renormalization group methods
(added August 1990)
RT Monte Carlo method
normalizing (statistics)
statistical mechanics
turbulence models

reorientation
USE **retraining**

repairing
USE **maintenance**

repeaters
UF *interpolators*
GS transmitters
. **repeaters**
RT amplifiers
radar receivers
receivers
∞ relay
∞ translators

repetition
RT counting
pattern recognition
redundancy encoding

replacing
RT damage assessment
installing
maintenance
relocation
replenishment
substitutes

replenishment
RT filling
input
∞ loading
refilling
refueling
replacing

replicas
RT electron microscopes
metallography
models
reproduction (copying)

report generators
RT computer programs
computer systems programs
∞ generators
user manuals (computer programs)

reports
GS reports
. congressional reports
. postlaunch reports
. Presidential reports
. wage surveys
RT aerospace technology transfer
conferences
∞ discussion
documentation
documents
information
information dissemination
papers
proposals
records
summaries
supplements
technology transfer

representations
RT characterization
descriptions
drawings
graphs (charts)
images
photographs
signatures

∞ **reproduction**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT fertilization
reproduction (biology)
reproduction (copying)
reproductive systems

reproduction (biology)
RT ∞ biology
birth
breeding (reproduction)
cell division
cloning (biology)
embryology
fertility
fetuses
mitosis
progeny
∞ reproduction
reproductive systems
sex glands

reproduction (copying)
UF *duplicating*
GS imagery
. **reproduction (copying)**
. . xerography
RT blueprints
document storage
drawings
engineering drawings
lithography
microfilms
photographic processing equipment
photography
printing
replicas
∞ reproduction
stencil processes

reproductive systems
GS anatomy
. genitourinary system
. . **reproductive systems**
. . . sex glands
. . . . gonads
. . . . . ovaries
. . . . . testes
. . . . prostate gland
. . . uterus
RT birth
chromosomes
fertility
fetuses
∞ reproduction
reproduction (biology)
∞ systems

reptiles
GS animals
. vertebrates
. . **reptiles**
. . . lizards
. . . snakes

. . . turtles
RT poikilothermia

Republic aircraft
GS Republic aircraft
. A-10 aircraft
. F-84 aircraft
. F-105 aircraft
RT ∞ aircraft

Republic of China
USE Taiwan

Republic of Korea
USE South Korea

Republic of South Africa
UF *South Africa*
GS nations
. Republic of South Africa
RT Africa
Botswana
Kalahari Basin (Africa)
Lesotho
Namibia
Swaziland

Republic of Vietnam
USE Vietnam

repulsion
USE force

requirements
GS requirements
. user requirements
RT specifications

rescue operations
RT aeronautical satellites
Assured Crew Return Vehicle
COSPAS
HH-65 helicopter
Marots (ESA)
∞ operations
SarSat
spacecraft recovery
X-38 crew return vehicle

research
GS research
. dynamic programming
. high temperature research
. linear programming
. low density research
. market research
. multidisciplinary research
. nonlinear programming
. nuclear research
. quadratic programming
RT critical path method
∞ design
ethics
exploration
interservice data exchange program
investigation
minimax technique
∞ research projects

research aircraft
UF *experimental aircraft*
ornithopter aircraft
GS research vehicles
. research aircraft
. . Avian 2/180 autogiro
. . AVRO 707 aircraft
. . B-70 aircraft
. . Breguet 940 aircraft
. . C-8A augmentor wing aircraft
. . D-558 aircraft
. . FD 2 aircraft
. . Firebee 2 target drone aircraft
. . H-17 helicopter
. . H-126 aircraft
. . HP-115 aircraft
. . meteorological research aircraft
. . Nord 1500 aircraft
. . Questol aircraft
. . rotor systems research aircraft
. . SC-1 aircraft
. . U-2 aircraft
. . VZ-2 aircraft
. . VZ-8 aircraft
. . X-1 aircraft
. . X-2 aircraft
. . X-3 aircraft
. . X-5 aircraft
. . X-13 aircraft
. . X-14 aircraft
. . X-15 aircraft
. . X-19 aircraft
. . X-20 aircraft
. . X-21 aircraft
. . X-21A aircraft
. . X-22 aircraft
. . X-22A aircraft
. . X-24 aircraft
. . X-31 aircraft
. . X-36 aircraft
. . XH-51 helicopter
. . XV-4 aircraft
. . XV-5 aircraft
. . XV-8A aircraft
. . XV-9A aircraft
. . XV-11A aircraft
RT aerospace planes
∞ aircraft
drone aircraft
fan in wing aircraft
flight test vehicles
flying platforms
ground effect machines
hovercraft ground effect machines
hypersonic aircraft
jet aircraft
joined wings
∞ military aircraft
nuclear propelled aircraft
rocket planes
submersible aircraft
supersonic aircraft
tailless aircraft
tandem wing aircraft
test vehicles
tilt wing aircraft
V/STOL aircraft
vertical takeoff aircraft
∞ winged vehicles
YF-12 aircraft

research and development
RT ∞ design
investigation
management planning
operations research
outer space treaty
programs
project management
proposals
∞ research projects
systems engineering
technology utilization
weapons development

research facilities
RT ∞ facilities
laboratories
∞ research projects
space industrialization
space laboratories
test facilities

research management
GS management
. research management
RT allocations
block diagrams
∞ budgets
engineering management
feasibility analysis
goals
industrial management
manpower
multidisciplinary research
operations research
personnel
priorities

∞ research projects
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Chinese space program
Earth & Ocean Physics Applications Program
French space program
Indian space program
Japanese space program
management
NASA programs
programs
project management
projects
research
research and development
research facilities
space programs
SPHINX

research vehicles
SN (VEHICLES DESIGNED TO BE SUBJECTS OF RESEARCH—NOT RESEARCH EQUIPMENT CONTAINERS)
GS research vehicles
. automated mixed traffic vehicles
. research aircraft
. . Avian 2/180 autogiro
. . AVRO 707 aircraft
. . B-70 aircraft
. . Breguet 940 aircraft
. . C-8A augmentor wing aircraft
. . D-558 aircraft
. . FD 2 aircraft
. . Firebee 2 target drone aircraft
. . H-17 helicopter
. . H-126 aircraft
. . HP-115 aircraft
. . meteorological research aircraft
. . Nord 1500 aircraft
. . Questol aircraft
. . rotor systems research aircraft
. . SC-1 aircraft
. . U-2 aircraft
. . VZ-2 aircraft
. . VZ-8 aircraft
. . X-1 aircraft
. . X-2 aircraft
. . X-3 aircraft
. . X-5 aircraft
. . X-13 aircraft
. . X-14 aircraft
. . X-15 aircraft
. . X-19 aircraft
. . X-20 aircraft

. . X-21 aircraft
. . X-21A aircraft
. . X-22 aircraft
. . X-22A aircraft
. . X-24 aircraft
. . X-31 aircraft
. . X-36 aircraft
. . XH-51 helicopter
. . XV-4 aircraft
. . XV-5 aircraft
. . XV-8A aircraft
. . XV-9A aircraft
. . XV-11A aircraft
. underwater research laboratories
. X-30 vehicle
RT boats
electric motor vehicles
∞ flight vehicles
lunar roving vehicles
∞ military vehicles
roving vehicles
ships
space laboratories
∞ spacecraft
surface effect ships
underwater vehicles
∞ vehicles
water vehicles

reserpine
GS bases (chemical)
. alkaloids
. . reserpine
drugs
. pentobarbital sodium
. . reserpine
nitrogen compounds
. alkaloids
. . reserpine
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . alkaloids
. . . . reserpine
RT antihypertensive agents

reserves
RT abundance
availability
backups
contingency
crude oil
economic factors
energy policy
estimates
estimating
evaluation
exploitation
exploration
forecasting
inventories
inventory controls
∞ materials
mineral deposits
mines (excavations)
∞ production
resources
stockpiling
∞ storage

reservoirs
SN (FOR SURFACE WATER STORAGE—NOT OIL OR GAS POOLS)
RT dams
evaporation
fresh water
lagoons
Lake Texoma (OK-TX)
lakes
ponds
rivers
solar ponds (heat storage)
streams
water resources
windpowered pumps

residential areas
RT cities
inhabitants
land
land use
megalopolises
regional planning
rural areas
suburban areas
urban development

residential energy
DEF Household energy requirements in residences, apartments, etc.
RT energy conservation
energy technology
heat pumps
solar cooling
solar heating
solar houses
space cooling (buildings)
space heating (buildings)
water heating

residual gas
GS gases
. residual gas
RT getters
high vacuum
outgassing
partial pressure
ultrahigh vacuum
vacuum apparatus
vacuum tubes

residual strength
RT crack propagation
fatigue (materials)
fracture mechanics
fracture strength
residual stress
∞ strength
tensile strength

residual stress
DEF In structures, any stress in an unloaded body. These stresses arise from local yielding of the material due to machining, welding, quenching or cold working. Used for internal stress.
UF *internal stress*
GS stresses
. residual stress
RT creep properties
machining
relaxation (mechanics)
residual strength
strain hardening
stress relaxation
stress relieving
stress-strain relationships
temperature inversions

residues
RT ashes
organic wastes (fuel conversion)
reaction products
solid wastes
waste treatment
waste water
wastes

resilience
GS mechanical properties
. resilience
RT compressive strength
elastic properties
shear properties
springs (elastic)
tensile strength

resin bonding
GS bonding
. resin bonding
RT adhesive bonding
metal bonding
metal-metal bonding

resin film infusion
(added August 1997)
UF *RFI (composite materials)*
RT composite materials
composite structures
fabrication
infiltration
polymer matrix composites
preforms
resin matrix composites
resin transfer molding

resin matrix composites
DEF Composite materials utilizing a matrix of filaments and/or fibers of glass, metal, or other material bound with a polymer or resin.
GS composite materials
. resin matrix composites
. . boron-epoxy composites
. . carbon-phenolic composites
. . graphite-epoxy composites
RT aramid fibers
bismaleimide
epoxy resins
hybrid composites
matrix materials
metal matrix composites
PEEK
polyimide resins
polymer matrix composites
prepregs
pultrusion
resin film infusion
resin transfer molding
resins
sheet molding compounds

resin transfer molding
(added May 1992)
UF *RTM (composite materials)*
GS forming techniques
. resin transfer molding
RT casting
composite materials
curing
fabrication
fiber composites
injection molding
matrix materials
molding materials
molds
polymer matrix composites
preforms
reinforcing fibers
resin film infusion
resin matrix composites

resins
GS resins
. alkyd resins

. ion exchange resins
. polyimide resins
. polyurethane resins
. silicone resins
. synthetic resins
. . addition resins
. . . acrylic resins
. . . vinyl copolymers
. . polyester resins
. . polyether resins
. . . PEEK
. . . polymethyl methacrylate
. . thermoplastic resins
. . . PEEK
. . . quinoxalines
. . . thermoplastic films
. . thermosetting resins
. . . epoxy resins
. . . . phenolic epoxy resins
. . . furan resins
. . . . polyamide resins
. . . . . Kevlar (trademark)
. . . . . Nylon (trademark)
. . . phenolic resins
. . . . micarta
. . . . phenolic epoxy resins
RT acrylates
Bakelite (trademark)
bismaleimide
Delrin (trademark)
fillers
Lexan (trademark)
melamine
paraplasts
∞ patterns
phenol formaldehyde
phloroglucinol
plastisols
resin matrix composites
teflon (trademark)

∞ resistance
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF In electricity, the factor by which the square of the instantaneous conduction current must be multiplied to obtain the power lost by heat dissipation or other permanent radiation of energy away from the electrical current. In mechanics, the opposition by frictional effects to forces tending to produce motion. Used for conductance and resistance coefficients.
UF *conductance*
resistance coefficients
RT abrasion resistance
acceleration tolerance
acoustic properties
aerodynamic drag
chemical properties
constrictions
contact resistance
corrosion resistance
crack propagation
creep strength
damping
diffusivity
durability
earthquake resistance
electrical properties
electrical resistance
electrical resistivity
flammability
flow resistance
fracture strength
fusibility
∞ high resistance
immunity
impact resistance
impact strength
impedance
Kapitza resistance
life (durability)
∞ low resistance
magnetoresistivity
moisture resistance
negative resistance circuits
negative resistance devices
oxidation resistance
permeability
prevention
protection
quality
radiation tolerance
resistance thermometers
retarding
sensitivity
shock resistance
skin resistance
stability
thermal resistance
tolerances (physiology)
transconductance
vulnerability
wave resistance
wear resistance

resistance coefficients
USE **resistance**

resistance heating
UF *Joule heating*
GS heating
. **resistance heating**
RT arc heating
electroslag refining
gas heating
levitation melting

resistance thermometers
GS measuring instruments
. temperature measuring instruments
. . thermometers
. . . **resistance thermometers**
RT bolometers
ohmmeters
∞ resistance
temperature measurement
thermocouple pyrometers

resistivity
USE **electrical resistivity**

resistojet engines
UF *resistojets*
GS engines
. rocket engines
. . electric rocket engines
. . . electrothermal engines
. . . . **resistojet engines**
RT arc jet engines
plasma engines
pulsed jet engines
space station propulsion

resistojets
USE **resistojet engines**

resistors
UF *tunnel resistors*
GS attenuators
. **resistors**
. . potentiometers (resistors)
. . printed resistors
. . thermistors
RT ballasts (impedances)
electric conductors
electric filters
electric reactors
∞ filaments
photoconductors
semiconductors (materials)
solid state devices
varistors

resolution
DEF The ability of a film, a lens, a combination of both, or a vidicon system to render barely distinguishable a standard pattern of black and white lines. In radar, the minimum angular separation at the antenna at which two targets can be distinguished (a function of beamwidth); or the minimum range at which two targets at the same azimuth can be separated (equal to one half the pulse height). Of a gyro, a measure of response to small changes in input; the maximum value of the minimum input change that will cause a detectable change in the output for inputs greater than the threshold, expressed as a percent of one half the input range. Used for resolving power.
UF *resolving power*
GS resolution
. angular resolution
. high resolution
. image resolution
. radar resolution
. radiometric resolution
. spatial resolution
. spectral resolution
. temporal resolution
RT accuracy
automatic traffic advisory and resolution
blurring
character recognition
contrast
definition
dynamic characteristics
errors
loci
high resolution coverage antennas
image contrast
image enhancement
legibility
loci
numerical aperture
∞ optics
perception
∞ power
precision
resolution cell
sensitivity
spatial filtering
Stark effect
∞ thresholds
tolerances (mechanics)
visibility
vision

resolution cell
RT ∞ cells
imaging techniques
radar detection
radar imagery
resolution

resolvers
RT analog computers
instrument transformers
transformers

resolving power
USE **resolution**

resonance
DEF The phenomena of amplification of a free wave or oscillation of a system by a forced wave or oscillation of exactly equal period. The forced wave may arise from an impressed force upon the system or from a boundary condition. The growth of the resonant amplitude is characteristically linear in time. Of a system in forced oscillation, the condition which exists when any change, however small, in the frequency of excitation causes a decrease in the response of the system.
GS **resonance**
. baryon resonance
. cyclotron resonance
. . electron cyclotron resonance
. magnetic resonance
. . ferromagnetic resonance
. . nuclear magnetic resonance
. . . proton magnetic resonance
. . . proton resonance
. . paramagnetic resonance
. . . electron paramagnetic resonance
. magnetosonic resonance
. meson resonance
. . X mesons
. acoustic resonance
. microwave resonance
. nuclear quadrupole resonance
. optical resonance
. orbital resonances (celestial mechanics)
. plasma resonance
. resonant vibration
. spin resonance
RT Foster theory
oscillations
Overhauser effect
. resonant frequencies
syntony
tuning
vibration

resonance charge exchange
GS exchanging
. charge exchange
. . **resonance charge exchange**
RT spin exchange

resonance fluorescence
DEF The emission of radiation by a gas or vapor as a result of excitation of atoms to a higher energy level by incident photons at the resonance frequency of the gas or vapor. Used for resonance radiation.
UF *resonance radiation*
GS emission
. light emission
. . luminescence
. . . fluorescence
. . . . **resonance fluorescence**
RT atomic excitations
atomic physics
quantum electrodynamics
∞ radiation

resonance lines
DEF Spectral lines which occur either as absorption or emission lines. Used for dielectronic satellite lines.
UF *dielectronic satellite lines*
RT line spectra
optical resonance
plasma resonance

resonance probes
GS measuring instruments
. **resonance probes**
RT impedance probes
magnetic probes
microwave plasma probes
plasma diagnostics
plasma resonance
tuners

resonance radiation
USE **resonance fluorescence**

resonance scattering
SN (INTERACTION WITH THE INTERIOR OF THE NUCLEUS—EXCLUDES POTENTIAL SCATTERING)
GS nuclear reactions
. nuclear scattering
. . **resonance scattering**
scattering
. nuclear scattering
. . **resonance scattering**
RT inverse scattering
Mossbauer effect
neutron scattering

resonance testing
RT damping tests
elastic damping
electronic equipment tests
fatigue tests
resonant frequencies
stability tests
static tests
structural stability
∞ **tests**
vibration tests
viscous damping

resonant cavities
USE **cavity resonators**

resonant frequencies
DEF Frequencies at which resonance exists. Used for natural frequencies and vibrational frequencies (structural).
UF *natural frequencies*
vibrational frequencies (structural)
GS frequencies
. **resonant frequencies**
RT acoustic frequencies
acoustic resonance
antinodes
bandwidth
beat frequencies
Bordoni peaks
cavity resonators
critical frequencies
critical velocity
damping
dynamic characteristics
∞ dynamics
electromagnetic absorption
harmonics
impedance
Mossbauer effect
nodes (standing waves)
oscillators
resonance
resonance testing
resonators
standing waves
transient response
tuners
tuning

resonant tunneling
(added September 1988)
RT barrier layers
electron tunneling
negative resistance devices
quantum electronics
quantum wells
transistors
tunnel diodes
∞ tunneling

resonant vibration
UF *mechanical resonance*
GS resonance
. **resonant vibration**
vibration
. **resonant vibration**
RT acoustic resonance
damping
dynamic stability
∞ dynamics
flapping
flutter
mechanical oscillators
oscillations
Q factors
stable oscillations
structural vibration
undamped oscillations

resonators
DEF In radio and radar applications, circuits which will resonate at a given frequency, or over a range of frequencies, when properly excited.
GS **resonators**
. cavity resonators
. . superconducting cavity resonators
. Helmholtz resonators
. multimode resonators
. optical resonators
RT delta antennas
electron tubes
frequency standards
grazing flow
magnetrons
masers
oscillators
resonant frequencies
self excitation
tuning
tuning fork gyroscopes

resource allocation
GS allocations
. **resource allocation**
RT distributing
energy conservation
energy policy
engineering management
logistics
NASA Interactive Planning System
outer space treaty
priorities
products
resources

resources
GS **resources**
. Earth resources
. . forests
. . . rain forests
. . fossil fuels
. . . coal
. . . . anthracite
. . . . lignite
. . . . solvent refined coal
. . . crude oil

. . . natural gas
. . . . liquefied natural gas
. . . peat
. . glaciers
. . icebergs
. . kerogen
. . land ice
. . marine resources
. . oil fields
. . range resources
. . springs (water)
. . tar sands
. . thermal resources
. . . geothermal resources
. . . . geysers
. . underwater resources
. . water resources
. . . aquifers
. extraterrestrial resources
. . lunar resources
. Internet resources
RT abundance
availability
consulting
depletion
economic development
economic factors
economic impact
economics
energy conservation
energy policy
engineering management
geothermal technology
Great Lakes (North America)
inventory management
logistics
logistics management
man environment interactions
manpower
∞ materials
Mississippi River (US)
personnel
personnel development
production management
recycling
reserves
resource allocation
site selection
urban development
vegetation

resources management
GS management
. resources management
. . forest management
. . . reforestation
. . information resources management
. . land management
RT Earth resources
environment management
environmental control
leasing
NASA Interactive Planning System
thermal resources
water runoff

respiration
DEF The interchange of gases of living organisms and the gases of the medium in which they live. Used for apnea and inhalation.
UF *apnea*
inhalation
GS respiration
. high altitude breathing
. liquid breathing
. pressure breathing
RT alveoli
asphyxia
∞ breathing
expiration
expired air
hydrogen metabolism
metabolism
oxygen metabolism
photosynthesis
physiology
respirators
respiratory system
resuscitation
sinuses
Valsalva exercise

respirators
GS medical equipment
. respirators
RT breathing apparatus
emergency breathing techniques
respiration
resuscitation
therapy

respiratory diseases
GS diseases
. respiratory diseases
. . aerosinusitis
. . asthma
. . emphysema
. . influenza
. . pneumonia
. . tuberculosis
RT beryllium poisoning
congestion
fungal diseases
lung morphology
pulmonary lesions

respiratory impedance
GS impedance
. respiratory impedance

respiratory physiology
GS physiology
. respiratory physiology
RT exercise physiology
∞ science

respiratory rate
GS rates (per time)
. respiratory rate
. . dyspnea
. . hypoventilation
. . tachypnea
RT hypercapnia
hyperpnea
spirometers

respiratory reflexes
GS reflexes
. respiratory reflexes
. . cough
. . Hering–Breuer reflex
. . sneezing
RT ∞ breathing

respiratory system
GS anatomy
. respiratory system
. . bronchi
. . diaphragm (anatomy)
. . larynx
. . . glottis
. . . vocal cords
. . lungs
. . . alveoli
. . nose (anatomy)
. . paranasal sinuses
. . pharynx
. . trachea
RT evaporation
homeostasis
hypercapnia
organs
pleurae
pulmonary circulation
respiration
∞ systems

respirometers
GS measuring instruments
. respirometers
RT bioinstrumentation
exhalation

responders
USE transponders

response bias
GS bias
. response bias
RT dynamic response
errors
∞ time response
transient response

response time (computers)
GS time
. response time (computers)
RT computer programming
computer systems performance
data processing
parallel processing (computers)

responses
DEF Of devices or systems, the motions (or other output) resulting from excitation under specified conditions.
GS responses
. dynamic response
. . transient response
. frequency response
. galvanic skin response
. modal response
. physiological responses
. . hemodynamic responses
RT chronaxy
learning
refractory period
∞ thresholds
time lag
∞ time response

rest
GS rest
. bed rest
RT prone position
recreation
sitting position
sleep
supine position

restartable rocket engines
GS engines
. rocket engines
. . restartable rocket engines
RT ducted rocket engines
electric rocket engines
electrostatic engines
electrothermal engines
hybrid propellant rocket engines
ion engines
liquid propellant rocket engines
nuclear rocket engines
retrorocket engines

solid propellant rocket engines
sustainer rocket engines
turborocket engines
Vernier engines

restoration
RT addition
reconstruction

restraints
USE **constraints**

restrictions
USE **constrictions**

resultants
DEF The sums of two or more vectors.
RT vector analysis

resuscitation
UF *artificial respiration*
RT emergency breathing techniques
first aid
liquid breathing
respiration
respirators

retaining
RT asteroid capture
constraints
containment
∞ holding
∞ joining
locking
∞ retention
sealing
∞ storage

retardants
GS **retardants**
. flame retardants
RT accelerating agents
additives
antiicing additives
antiknock additives
antioxidants
catalysts
explosion suppression
inhibitors
neutralizers
penetrants
preservatives
∞ retarders
retarding
stabilizers (agents)
suppressors
surfactants
wear inhibitors

∞ **retarders**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT retardants
retarders (devices)

retarders (devices)
RT blocking
brakes (for arresting motion)
braking
constrictions
∞ retarders
retarding

retarding
UF *suppression*
RT attenuation
blocking
braking
damping
deceleration
fouling
hysteresis
prevention
∞ reduction
∞ resistance
retardants
retarders (devices)
stopping

retarding ion mass spectrometers
USE **mass spectrometers**

∞ **retention**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT retaining
retention (psychology)

retention (psychology)
RT learning
memory
∞ retention

reticles
DEF Systems of lines or wires placed in the focal plane of an optical instrument to serve as a reference. Also called a reticule.
GS **reticles**
. wire grid lenses
RT contact lenses
eyepieces
∞ grids
lenses
optical equipment
scale (ratio)

reticulocytes
GS cells (biology)
. blood cells
. . erythrocytes
. . . **reticulocytes**
RT hematology
hemoglobin
hemolysis
hemorrhages

retina
GS anatomy
. sense organs
. . eye (anatomy)
. . . **retina**
. . . . fovea
RT electroretinography
phosphene
photoreceptors
vision
visual fields
visual pigments

retinal adaptation
GS adaptation
. **retinal adaptation**
. . dark adaptation
. . light adaptation
RT perception
visibility
vision

retinal images
GS **images**
. **retinal images**
RT vision
visual fields

retinene
UF *vitamin A*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **retinene**
. lipids
. . **retinene**
vitamins
. **retinene**
RT aldehydes
carotene

retirement
RT employee relations
industries
personnel
sociology

retirement for cause
DEF Procedure, primarily on aircraft, based on fracture mechanics, which allows safe utilization of the full life capacities of each component.
RT component reliability
engine parts
fatigue life
fracture strength
inventory management
life (durability)
metal fatigue
service life
spare parts

RETORC (torpedoes)
USE **torpedoes**

retort processing
DEF One method for converting shale oil into oil similar to petroleum oils.
RT fractionation
hydrocarbon fuels
oils
∞ processing
shale oil

retractable equipment
UF *retractable landing gear*
RT aerodynamic brakes
landing gear
refueling

retractable landing gear
USE **landing gear**
retractable equipment

retraining
UF *reorientation*
RT adaptation
education
management methods
manpower
personnel
tasks
training analysis

retrieval
GS **retrieval**
. data retrieval
. information retrieval
. payload retrieval (STS)
RT ∞ recovery
searching

retroaction
USE **retrothrust**

retrofiring
GS firing (ignition)
. rocket firing
. . **retrofiring**
RT deceleration
retrorocket engines
retrothrust

retrofitting
DEF Modification of equipment to incorporate changes made in later production of similar equipment; the changes may be performed in the factory or in the field.
GS **retrofitting**
. acoustic retrofitting
RT installing

retrograde orbits
(added June 1995)
DEF Motion in an orbit opposite to the usual orbital direction of celestial bodies within a given system. Specifically, of a satellite, motion in a direction opposite to the direction of rotation of the primary.
GS orbits
. **retrograde orbits**
RT interacting galaxies
orbital mechanics
planetary orbits
precession
satellite orbits
spacecraft orbits
stellar orbits
three body problem

retroreflection
DEF Reflection wherein the reflected rays return along paths parallel to those of their corresponding incident rays. Also called retroflection.
GS reflection
. **retroreflection**
RT antenna arrays
incident radiation
LAGEOS (satellite)
lunar retroreflectors
reflected waves
retroreflectors

retroreflectors
DEF Class of optical instruments which cause reflected radiation to return along paths parallel to those of their corresponding incident rays.
GS radar equipment
. **retroreflectors**
reflectors
. **retroreflectors**
RT radar corner reflectors
retroreflection

retrorocket engines
DEF Rocket engines fitted on or in spacecraft, satellites, or the like to produce thrust opposed to forward motion.
GS engines
. rocket engines
. . **retrorocket engines**
. . . BE-3 engine
RT control rockets
internal combustion engines
liquid propellant rocket engines
man operated propulsion systems
restartable rocket engines
retrofiring
retrothrust
solid propellant rocket engines

retrothrust
DEF Thrust used for a braking maneuver; reverse thrust. Used for retroaction.
UF *retroaction*
GS thrust
. rocket thrust
. . **retrothrust**
RT deceleration
retrofiring
retrorocket engines

return beam vidicons
GS electron tubes
. camera tubes
. . vidicons
. . . **return beam vidicons**
. . . . thermicons
RT television cameras

return to Earth space flight
GS space flight
. **return to Earth space flight**
RT Assured Crew Return Vehicle
interplanetary flight
manned Mars missions
spacecraft reentry
X-38 crew return vehicle

reusable heat shielding
GS shielding
. heat shielding
. . **reusable heat shielding**
RT cooling
heat transfer
reentry shielding
spacecraft shielding
temperature control
thermal control coatings
thermal protection

reusable launch vehicles
GS launch vehicles
. **reusable launch vehicles**
. . single stage to orbit vehicles
. . . Delta Clipper
. . . HOTOL launch vehicle
. . X-33 reusable launch vehicle
. . X-34 reusable launch vehicle
RT Advanced Launch System (STS)
Aeromaneuvering Orbit to Orbit Shuttle
recoverable launch vehicles
rocket engines
spacecraft launching
spacecraft recovery
∞ vehicles

reusable rocket engines
GS engines
. rocket engines
. . **reusable rocket engines**
RT oxygen-hydrocarbon rocket engines

reusable spacecraft
GS reentry vehicles
. recoverable spacecraft
. . **reusable spacecraft**
. . . aerospace planes
. . . . HOPE aerospace plane
. . . . HOTOL launch vehicle
. . . . X-30 vehicle
. . . MARS (Manned Reusable Spacecraft)
. . . single stage to orbit vehicles
. . . . Delta Clipper
. . . . HOTOL launch vehicle
. . . space shuttles
. . . . Buran space shuttle
. . . . Hermes manned spaceplane
. . . . Space Shuttle orbiters
. . . . . Atlantis (orbiter)
. . . . . Challenger (Orbiter)
. . . . . Columbia (Orbiter)
. . . . . Discovery (Orbiter)
. . . . . Endeavour (orbiter)
. . . . . Enterprise (Orbiter)
RT expendable stages (spacecraft)
ferry spacecraft
Inertial Upper Stage
interim stages (spacecraft)
interplanetary spacecraft
landing modules
lunar landing modules
manned spacecraft
Saenger space transportation system
soft landing spacecraft
Space Shuttle Boosters
unmanned spacecraft
X-33 reusable launch vehicle
X-34 reusable launch vehicle

reuse
GS utilization
. **reuse**
. . software reuse
RT oil recovery
∞ recovery

revenue
RT allocations
assessments
budgeting
costs
international trade

reverberation
DEF The persistance of sound in an enclosed space, as a result of multiple reflections, after the sound source has stopped. The sound that persists in an enclosed space, as a result of repeated reflection or scattering after the source of the sound has stopped.
GS acoustic properties
. acoustic scattering
. . **reverberation**
scattering
. wave scattering
. . acoustic scattering
. . . **reverberation**
RT echoes
noise (sound)
reverberation chambers
sound waves

reverberation chambers
DEF Chambers designed to eliminate outside noise for accurate acoustic measurement.
GS compartments
. test chambers
. . **reverberation chambers**
test facilities
. **reverberation chambers**
RT acoustic measurement
acoustic simulation
∞ chambers
environmental tests
reverberation

reverse engineering
(added May 1992)
RT computer programming
design analysis
reversing
software development tools
software engineering
systems engineering

reverse field pinch
DEF A method of plasma confinement under investigation as part of the mirror and pinch programs.
GS pinch effect
. **reverse field pinch**
RT magnetohydrodynamic flow
plasma control
reactor technology

screw pinch
toroidal plasmas

reverse osmosis
DEF The application of pressure to stop or reverse the transport of solvent through a semipermeable membrane separating two solutions of different solute concentration. The applied pressure required to prevent the flow of solvent across a perfectly semipermeable membrane is called the osmotic pressure and is a characteristic of the solution.
GS osmosis
. **reverse osmosis**
RT demineralizing
desalinization
membranes
permeating

reverse time
USE **reaction time**

reversed flow
GS fluid flow
. **reversed flow**
RT boundary layer separation
recirculative fluid flow
reversing
separated flow

reversing
RT ∞ direction
reverse engineering
reversed flow

reviewing
RT ∞ discussion
evaluation
examination
training evaluation

revisions
UF *alteration*
modification
RT adjusting
contracts
correction
extensions
variations

revolution (motion)
USE **revolving**

revolving
DEF Moving in a path about an axis, usually external to the body accomplishing the motion. Used for revolution (motion).
UF *revolution (motion)*
GS gyration
. **revolving**
RT angular velocity
centripetal force
rotation

reward (psychology)
GS reinforcement (psychology)
. **reward (psychology)**
RT comfort
human reactions
psychological factors

Reynolds averaging
(added October 1997)
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Reynolds averaging**
RT average
boundary layer equations
computational fluid dynamics
flow equations
large eddy simulation
Navier–Stokes equation
Reynolds stress
turbulence models

Reynolds equation
UF *Reynolds law*
GS equations of motion
. **Reynolds equation**
flow equations
. **Reynolds equation**
RT aerodynamic configurations
∞ equations
Navier–Stokes equation
scale models

Reynolds law
USE **Reynolds equation**

Reynolds number
DEF A nondimensional parameter representing the ratio of the momentum forces to the viscous forces in fluid flow. (After Osborne Reynolds, 1842–1912, English scientist). Used for critical Reynolds number.
UF *critical Reynolds number*
GS dimensionless numbers
. **Reynolds number**
. . high Reynolds number
. . low Reynolds number
ratios
. **Reynolds number**
. . high Reynolds number
. . low Reynolds number
RT boundary layer flow
boundary layer stability
boundary layer transition
critical velocity
fluid flow
Froude number
Grashof number
inviscid flow
laminar flow
Peclet number
Prandtl number
Richardson number
scale effect
transition points
turbulent flow
viscous flow

Reynolds stress
DEF In the mathematical treatment of a viscous, incompressible, homogeneous fluid in turbulent motion, that represents the transfer of momentum due to turbulent fluctuations.
GS stresses
. **Reynolds stress**
RT incompressible flow
Navier–Stokes equation
Reynolds averaging
turbulent boundary layer
turbulent flow

RF–4 aircraft
USE **F–4 aircraft**

RF–8 aircraft
USE **F–8 aircraft**

RFI (composite materials)
USE **resin film infusion**

RH–2 helicopter
USE **UH–1 helicopter**

Rhea (astronomy)
DEF A natural satellite of the planet Saturn orbiting at a mean distance of 527,000 kilometers.
GS celestial bodies
. natural satellites
. . icy satellites
. . . **Rhea (astronomy)**
. . Saturn satellites
. . . **Rhea (astronomy)**
RT Saturn (planet)
solar system

rhenium
GS chemical elements
. **rhenium**
. . rhenium isotopes
metals
. refractory metals
. . **rhenium**
. . . rhenium isotopes
. transition metals
. . **rhenium**
. . . rhenium isotopes
refractory materials
. refractory metals
. . **rhenium**
. . . rhenium isotopes

rhenium alloys
GS alloys
. heat resistant alloys
. . refractory metal alloys
. . . **rhenium alloys**
refractory materials
. refractory metal alloys
. . **rhenium alloys**

rhenium compounds
RT ∞ chemical compounds
Group 7B compounds
∞ metal compounds

rhenium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **rhenium isotopes**
. rhenium
. . **rhenium isotopes**
metals
. refractory metals
. . rhenium
. . . **rhenium isotopes**
. transition metals
. . rhenium
. . . **rhenium isotopes**
refractory materials
. refractory metals
. . rhenium
. . . **rhenium isotopes**
RT radioactive isotopes

rheocasting
DEF Use of partially solidified metal alloys (fractions solids) fed directly into a casting machine for forming into machine parts.
GS forming techniques
. casting
. . **rheocasting**
RT alloys
cast alloys
dies
forging
slurries
solidification

rheoelectrical simulation
GS simulation

. rheoelectrical simulation
RT analog circuits
analog simulation
bionics
flow distribution

rheoencephalography
RT blood circulation
brain
brain circulation

rheology
DEF The study of the deformation and flow of matter.
RT electrorheological fluids
flow measurement
flow theory
∞ fluids
liquid flow
Maxwell fluids
nonNewtonian fluids
plastic flow
plastic properties
viscosity

rheometers
GS measuring instruments
. flowmeters
. . rheometers
RT blood circulation

Rhesus factor
RT antigens
blood
congenital anomalies

rheumatic diseases
GS diseases
. rheumatic diseases
RT arthritis

rhizopus
GS plants (botany)
. fungi
. . rhizopus
RT blight
∞ mold

rho-mesons
GS particles
. elementary particles
. . bosons
. . . mesons
. . . . vector mesons
. . . . . rho-mesons
. . fermions
. . . baryons
. . . . rho-mesons
. . hadrons
. . . baryons
. . . . rho-mesons
. . . mesons
. . . . vector mesons
. . . . . rho-mesons
. nuclear particles
. . bosons
. . . mesons
. . . . vector mesons
. . . . . rho-mesons
RT charged particles
eta-mesons

rhodamine
(added July 1988)
GS dyes
. rhodamine
organic compounds
. cyclic compounds
. . rhodamine
RT amines
dye lasers
fluorescence
laser materials

Rhode Island
GS nations
. United States
. . Rhode Island
RT Block Island Sound (RI)

Rhodesia
USE Zimbabwe

rhodium
GS chemical elements
. rhodium
. . rhodium isotopes
metals
. transition metals
. . rhodium
. . . rhodium isotopes

rhodium 102
USE rhodium isotopes

rhodium 106
USE rhodium isotopes

rhodium alloys
GS alloys
. rhodium alloys
RT platinum alloys

rhodium compounds
RT ∞ chemical compounds
Group 8 compounds

rhodium isotopes
UF *rhodium 102*
rhodium 106
GS chemical elements
. nuclides
. . isotopes
. . . rhodium isotopes
. rhodium
. . rhodium isotopes
metals
. transition metals
. . rhodium
. . . rhodium isotopes

rhombic antennas
DEF Antennas composed of long wire radiators comprising the sides of a rhombus. The antenna usually is terminated in an impedance. The sides of the rhombus, the angle between the sides, the elevation, and the termination are proportioned to give the desired directivity.
GS antennas
. directional antennas
. . rhombic antennas
RT antenna design
radio antennas

rhombohedrons
GS geometry
. Euclidean geometry
. . polyhedrons
. . . rhombohedrons

rhomboids
DEF Parallelograms whose adjacent sides are not equal.
GS geometry
. Euclidean geometry
. . polygons
. . . tetragons
. . . . parallelograms
. . . . . rhomboids

Rhone Delta (France)
GS landforms
. deltas
. . Rhone Delta (France)
RT France
Mediterranean Sea
rivers

rhyolite
GS rocks
. igneous rocks
. . rhyolite
RT lava
magma
silicon dioxide

∞ **rhythm**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT oscillations
periodic variations
rhythm (biology)

rhythm (biology)
UF *biological clocks*
biological rhythm
biorhythms
chronobiology
periodicity (biology)
GS rhythm (biology)
. circadian rhythms
RT activity cycles (biology)
alternations
∞ biology
cycles
desynchronization (biology)
jet lag
phenology
∞ rhythm

ribbon parachutes
DEF Parachutes having a canopy consisting of an arrangement of closely spaced tapes. These parachutes have high porosity with attendant stability and slight opening shock.
GS parachutes
. ribbon parachutes
RT drag chutes
recovery parachutes

ribbons
RT conveyors
fabrics
fasteners
metal strips
∞ strip
∞ tapes

riblets
(added October 1988)
DEF Longitudinal striations forming V-shaped grooves on aerodynamic and hydrodynamic surfaces. The riblet devices act to reduce large-scale disturbances near the boundary layer. These grooves are dimensional on the order of the wall vortices and turbulent dimensions.
GS grooves
. V grooves
. . riblets
RT boundary layer control
drag reduction
friction drag
shear layers
skin friction
striation
turbulent boundary layer

vortex alleviation

riboflavin
UF *vitamin B 2*
vitamin G
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **riboflavin**
vitamins
. **riboflavin**

ribonucleic acids
DEF A chemical found in the nucleus and cytoplasm of cells. It plays an important role in protein synthesis and other chemical activities of the cell. Used for RNA, messenger RNA, transfer RNA, and ribosomal RNA.
UF *messenger RNA*
ribosomal RNA
transfer RNA
GS acids
. nucleic acids
. . **ribonucleic acids**
biopolymers
. nucleic acids
. . **ribonucleic acids**
organic compounds
. nucleic acids
. . **ribonucleic acids**
RT adenines
gene expression
genes
guanosines
polynucleotides

ribose
GS organic compounds
. carbohydrates
. . **sugars**
. . . monosaccharides
. . . . pentose
. . . . . **ribose**
RT nucleosides

ribosomal RNA
USE **ribonucleic acids**

ribs (supports)
RT longerons
reinforcement (structures)
reinforcement rings
stiffening
webs (supports)

Riccati equation
GS algebra
. linear equations
. . **Riccati equation**
analysis (mathematics)
. real variables
. . differential equations
. . . **Riccati equation**
. . linear equations
. . . **Riccati equation**

rice
GS farm crops
. grains (food)
. . **rice**
plants (botany)
. **rice**
RT wheat

Richards theorem
GS theorems
. **Richards theorem**
RT network synthesis
signal flow graphs

Richardson number
DEF A nondimensional number arising in the study of shearing flows of a stratified fluid.
GS dimensionless numbers
. **Richardson number**
ratios
. **Richardson number**
RT aerodynamic stability
Reynolds number
shear flow

Richardson-Dushman equation
USE **temperature effects**
thermionic emission

∞ **ridges**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *cuestas*
hogbacks
RT bridges (landforms)
buckling
corrugating
gaps (geology)
karst
landforms
mid-ocean ridges
mountains
protuberances
wrinkling

riding quality
GS quality
. **riding quality**
RT comfort
passengers
seats
suspension systems (vehicles)
transportation

Riemann integral
USE **measure and integration**

Riemann manifold
UF *Riemann space*
Riemann sphere
GS geometry
. differential geometry
. . **Riemann manifold**
manifolds (mathematics)
. **Riemann manifold**
RT Euclidean geometry

Riemann problem
USE **Cauchy problem**

Riemann space
USE **Riemann manifold**

Riemann sphere
USE **Riemann manifold**

Riemann waves
GS elastic waves
. shock waves
. . **Riemann waves**
RT blast loads
differential equations
dynamic pressure
explosions
hyperbolic functions

Riesz theorem
GS theorems
. **Riesz theorem**
RT differential equations
hyperbolic functions

rifles
GS weapons
. guns (ordnance)
. . **rifles**
RT artillery

RIFT (reactor in flight test)
UF *reactor in flight test program*
RT electric propulsion
∞ reactors
rocket engines
Rover project
Saturn project

rift valleys
USE **valleys**

rifts
USE **geological faults**

rigging
RT assembling
construction
∞ equipment
materials handling
shrouds

rigid bodies
USE **rigid structures**

rigid mounting
GS mounting
. **rigid mounting**
RT pylon mounting

rigid rotor helicopters
GS V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **rigid rotor helicopters**
. . . . CH-3 helicopter
. . . . F-28 helicopter
. . . . XH-51 helicopter
RT ∞ aircraft
OH-5 helicopter

rigid rotors
UF *hingeless rotors*
GS airfoils
. wings
. . rotary wings
. . . **rigid rotors**
rigid structures
. **rigid rotors**
rotating bodies
. rotors
. . rotary wings
. . . **rigid rotors**
RT bearingless rotors

rigid rotors (plasma physics)
DEF Ensembles of electrons moving in circular or nearly circular orbits at a constant angular frequency.
GS **rigid rotors (plasma physics)**
. plasma physics
RT molecular collisions
molecular rotation
∞ physics
plasma control

rigid structures
UF *inelastic bodies*
rigid bodies
stiff structures
GS **rigid structures**
. rigid rotors
. rigid wings
RT arches

composite materials
concrete structures
Euler equations of motion
hybrid structures
plastic bodies
reinforcement (structures)
sandwich structures
space erectable structures
steel structures
∞ structures
translational motion
welded structures

rigid wings
SN (EXCLUDES 'RIGID ROTORS')
GS airfoils
. wings
. . **rigid wings**
rigid structures
. **rigid wings**
RT aeroelasticity
fixed wings
flexible wings
low aspect ratio wings

∞ rigidity
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT flexibility
magnetic rigidity
mechanical properties
modulus of elasticity
ruggedness
stiffness
structural stability

rills
USE **valleys**

rims
RT ∞ blades
borders
edges
margins
sides

ring currents
GS electric current
. **ring currents**
RT atmospheric electricity
electrojets
plasma currents

ring discharge
GS electric current
. electric discharges
. . Townsend discharge
. . . gas discharges
. . . . toroidal discharge
. . . . . **ring discharge**
RT ∞ discharge
electrodeless discharges
gas ionization
high frequencies
radio frequency discharge

ring galaxies
(added November 1988)
GS celestial bodies
. galaxies
. . **ring galaxies**
RT elliptical galaxies
galactic evolution
galactic structure
interacting galaxies
spiral galaxies

ring lasers
GS stimulated emission devices
. lasers
. . **ring lasers**

ring structures
GS **ring structures**
. reinforcement rings
. ring wings
RT aerodynamic configurations
∞ bands
hoops
reinforcement (structures)
∞ rings
∞ structures

ring wings
GS airfoils
. wings
. . uncambered wings
. . . **ring wings**
. . unswept wings
. . . **ring wings**
ring structures
. **ring wings**
RT ducted fans
shrouded propellers
twisted wings

∞ rings
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT annuli
bodies of revolution
circles (geometry)
Jupiter rings
O ring seals
planetary rings
reinforcement rings
ring structures
rings (mathematics)
Saturn rings
storage rings (particle accelerators)
toroidal plasmas
toruses
Uranus rings
vortex rings

rings (mathematics)
RT ∞ mathematics
∞ rings

Rio Grande (North America)
GS rivers
. **Rio Grande (North America)**
RT Gulf of Mexico
Mexico
New Mexico
Texas

riometers
GS measuring instruments
. radiation measuring instruments
. . **riometers**
RT atmospheric ionization
auroral absorption
ionograms
ionosondes
ionospheric noise
ionospheric propagation

ripples
GS elastic waves
. capillary waves
. . **ripples**
surface waves
. capillary waves
. . **ripples**
RT gravity waves
interfacial tension
water waves
wind (meteorology)

RISC processors
(added March 1995)
DEF A type of computer processor designed to optimize total system performance by simple, fast decoding of the instructions most commonly employed in computer operations and characterized by: a simple instruction set with the majority of instructions being single cycle; instructions that are register–to–register with LOAD and STORE commands being the only memory–reference instructions; very few addressing modes; hardwired control; instructions with one or two sizes and with fields at fixed locations; and some degree of pipelining.
UF *reduced instruction set computing*
GS computer components
. central processing units
. . **RISC processors**
RT architecture (computers)
chips (electronics)
computer programming
computer systems performance
firmware
pipelining (computers)
very large scale integration

risers
RT castings
pipes (tubes)

risk
DEF The combined effect of the likelihood of an unfavorable occurrence and the potential impact of that occurrence.
RT acceptability
assumptions
∞ capacity
commerce
confidence
confidence limits
contingency
decision theory
estimates
estimating
finance
forecasting
game theory
hazards
inventory controls
mathematical models
maximum likelihood estimates
operations research
predictions
reliability
strategy

RIT engines
DEF Radio frequency ion thrustors which generate thrust by converting electric energy into a reaction force by utilizing an electromagnetic field. Used for radio frequency ion thrustor engines.
UF *radio frequency ion thrustor engines*
GS engines
. rocket engines
. . electric rocket engines
. . . ion engines
. . . . **RIT engines**
RT electrostatic engines
plasma engines

Ritz averaging method
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Ritz averaging method**
RT ∞ methodology

river basins
GS landforms
. structural basins
. . **river basins**
. . . Atchafalaya River Basin (LA)
. . . Chena River Basin (AK)
. . . Columbia River Basin (ID–OR–WA)
. . . Delaware River Basin (US)
. . . Feather River Basin (CA)
. . . Missouri River Basin (US)
. . . Susquehanna River Basin (MD–NY–PA)
. . . Wabash River Basin (IL–IN–OH)
. . . wadis
RT Amazon region (South America)
Chesapeake Bay (US)
Death Valley (CA)
International Hydrological Decade
lakes
meanders
Mississippi River (US)
Missouri River (US)
rapids
ravines
rivers
Sacramento Valley (CA)
Saginaw Bay (MI)
San Joaquin Valley (CA)
Shenandoah Valley (VA)
vadose water
watersheds

rivers
DEF A general term for natural fresh water surface streams of considerable volume and permanent or seasonal flow, moving in definite channels toward seas, lakes, or other rivers. Rivers are large streams or ones larger than brooks or creeks, such as trunk systems and the larger branches of drainage systems.
GS **rivers**
. Colorado River (North America)
. Hudson River (NY–NJ)
. Mississippi River (US)
. Missouri River (US)
. Ohio River (US)
. Rio Grande (North America)
RT alluvium
Amazon region (South America)
Atchafalaya River Basin (LA)
aufeis (ice)
bayous
canyons
Columbia River Basin (ID–OR–WA)
Delaware River Basin (US)
deltas
Earth resources
erosion
estuaries
Feather River Basin (CA)
inland waters
Lake Erie
Lake Huron
Lake Michigan
Lake Ontario
Lake Superior
meanders
Mississippi Delta (LA)
Missouri River Basin (US)
rapids
reservoirs
Rhone Delta (France)
river basins
shoals
shorelines
sounds (topographic features)
streams
surface water
Susquehanna River Basin (MD–NY–PA)
tributaries
valleys
Wabash River Basin (IL–IN–OH)
wadis
water color
water runoff
watersheds
waterways
wharves

riveted joints
GS joints (junctions)
. **riveted joints**
RT bolted joints
butt joints
lap joints
metal joints
welded joints

riveting
RT ∞ joining
rivets
sealing

rivets
GS fasteners
. **rivets**
RT couplings
holders
pins
riveting

RL circuits
UF *LR circuits*
GS circuits
. **RL circuits**
. . RLC circuits
RT coupling circuits
electrical resistance
inductance
LC circuits
network analysis
network synthesis
time constant
transconductance

RL-10 engines
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **RL-10 engines**
. . . . RL-10-A-1 engine
. . . . RL-10-A-3 engine
RT Atlas Centaur launch vehicle
Centaur project
cryogenic rocket propellants
Saturn launch vehicles

RL-10-A-1 engine
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . hydrogen oxygen engines
. . . . **RL-10-A-1 engine**
. . . RL-10 engines
. . . . **RL-10-A-1 engine**

RL-10-A-3 engine
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . hydrogen oxygen engines
. . . . **RL-10-A-3 engine**
. . . RL-10 engines
. . . . **RL-10-A-3 engine**
RT Saturn D launch vehicle

RLC circuits
UF *LRC circuits*
RLC networks
GS circuits
. RL circuits
. . **RLC circuits**
RT capacitance
capacitance switches
electrical resistance
LC circuits
network analysis
network synthesis
RC circuits
time constant
transconductance

RLC networks
USE **RLC circuits**

roads
GS roads
. highways
RT ∞ facilities
intersections
passageways
pavements
rapid transit systems
site selection
streets
transportation
transportation networks

roadway powered vehicles
DEF Surface vehicles utilizing a combination of an electrical power source embedded in a roadway and an inductive coupled power pickup.
GS surface vehicles
. **roadway powered vehicles**
RT electric batteries
electric motor vehicles
energy storage

roasting
UF *calcination*
RT baking
desulfurizing
drying
heating
ignition
oxidation
reduction (chemistry)
sintering

ROBIN balloons
GS expandable structures
. inflatable structures
. . balloons
. . . meteorological balloons
. . . . **ROBIN balloons**
RT high altitude balloons
radiosondes
rockoons
skyhook balloons
sounding

robot arms
(added January 1990)
UF *arms (robotics)*
RT end effectors
manipulators
robot dynamics
robotics
robots

robot control
(added December 1990)
RT adaptive control
∞ control
control systems design
control theory
dynamic control
feedback control
inverse kinematics
robot dynamics
robotics
robots

robot dynamics
(added January 1990)
UF *robot motion*
RT dynamic control
∞ dynamics
end effectors
inverse kinematics
manipulators
robot arms
robot control
robotics
telerobotics
trajectory planning

robot fingers
USE **end effectors**

robot hands
USE **end effectors**

robot motion
USE **robot dynamics**

robot sensors
(added January 1990)
GS **robot sensors**
. tactile sensors (robotics)
. torque sensors (robotics)
RT acceleration measurement
computer vision
robotics
robots
∞ sensors

robotics
DEF The study and development of reprogrammable devices that do multifunctional tasks, conventionally done by humans, using manipulative functions and/or sensory feedback. The extension of human capabilities to manipulate, repair, service, construct and/or manufacture in space or on the ground is of primary interest to the aerospace community.
GS **robotics**
. telerobotics
RT artificial intelligence
automata theory
automatic control
∞ automation
computer aided design
computer aided manufacturing
computer aided mapping
computer vision
end effectors
inverse kinematics
man machine systems
manipulators
multisensor fusion
position sensing
robot arms
robot control
robot dynamics
robot sensors
robots
task planning (robotics)
teleoperators
trajectory planning
voice control

robots
RT artificial intelligence
automata theory
bionics
computer vision
end effectors
psycholinguistics
robot arms
robot control
robot sensors
robotics
servomechanisms
tactile sensors (robotics)
task planning (robotics)
telerobotics
torque sensors (robotics)
voice control

robustness (mathematics)
DEF Insensitivity of systems to uncontrolled perturbations and independent of changes in environmental parameters as demonstrated mathematically.
RT algorithms
control stability
control theory
feedback control
linear systems
mathematical models

Roche limit
GS range (extremes)
. **Roche limit**
RT celestial mechanics
dimensional stability
gravitation
natural satellites
orbits
rotating bodies
two body problem

rock bolts
GS fasteners
. bolts
. . **rock bolts**

rock intrusions
DEF Vertical tabular bodies of rock that fill fissures in host rocks. Used for dikes (geology).
UF *dikes (geology)*
GS **rock intrusions**
. batholiths
RT contacts (geology)
igneous rocks
inliers (landforms)
regolith
rocks

rock mechanics
DEF The theoretical and applied science of the physical behavior of rocks, representing a branch of mechanics concerned with the response of rock to the force fields of its physical environment.
RT fracture mechanics
geology
rocks
soil mechanics
structural properties (geology)

rock salt
USE **halites**

rocket boosters
USE **booster rocket engines**

rocket catapults
GS launchers
. catapults
. . **rocket catapults**
. rocket launchers
. . **rocket catapults**
RT gun launchers
launch vehicles
launching sites
missiles
∞ rockets

rocket chambers
USE **thrust chambers**

rocket engine 9KS-11000
GS engines
. rocket engines
. . booster rocket engines
. . . **rocket engine 9KS-11000**

rocket engine cases
UF *missile engine cases*
rocket motor cases
GS cases (containers)
. **rocket engine cases**
RT bonded joints
missile bodies
orthotropic cylinders
perforated shells
shells (structural forms)
thrust chambers

rocket engine control
GS engine control
. **rocket engine control**
RT attitude control
automatic control
∞ control
directional control
flight control
fuel control
HEUS rocket engines
missile control
remote control
servocontrol
spacecraft control
thrust control

rocket engine design
GS engine design
. **rocket engine design**
RT aerospike engines
cold flow tests
∞ design
engine tests
prefiring tests
Rover project

rocket engine noise
GS elastic waves
. sound waves
. . noise (sound)
. . . engine noise
. . . . **rocket engine noise**
RT mufflers

rocket engines
DEF Reaction engines that contain within themselves, or carry along with themselves, all the substances necessary for their operation or for the consumption or combustion of their fuel, not requiring of any outside substance and hence capable of operation in outer space. Used for interplanetary propulsion.
UF *interplanetary propulsion*
GS engines
. **rocket engines**
. . booster rocket engines
. . . AJ-10 engine
. . . Algol engine
. . . apogee boost motors
. . . H-1 engine
. . . LR-87-AJ-5 engine
. . . M-1 engine
. . . M-55 engine
. . . MA-2 engine
. . . MA-3 engine
. . . MA-5 engine
. . . Nike booster rocket engines
. . . P-1 engine
. . . rocket engine 9KS-11000
. . . Space Shuttle Boosters
. . . . Advanced Solid Rocket Motor (STS)
. . . X-405 engine
. . ducted rocket engines
. . electric rocket engines
. . . electrostatic engines
. . . electrothermal engines
. . . . arc jet engines
. . . . plasma engines
. . . . . two stage plasma engines
. . . . resistojet engines
. . . ion engines
. . . . cesium engines
. . . . mercury ion engines
. . . . RIT engines
. . HEUS rocket engines
. . hot water rocket engines
. . hybrid propellant rocket engines
. . . lithergol rocket engines
. . liquid propellant rocket engines
. . . AJ-10 engine
. . . F-1 rocket engine
. . . H-1 engine
. . . hydrazine engines
. . . hydrogen oxygen engines
. . . . J-2 engine
. . . . M-1 engine
. . . . RL-10-A-1 engine
. . . . RL-10-A-3 engine
. . . liquid air cycle engines
. . . LR-62-RM-2 engine
. . . LR-87-AJ-5 engine
. . . LR-91-AJ-5 engine
. . . MA-2 engine
. . . MA-3 engine
. . . MA-5 engine
. . . oxygen-hydrocarbon rocket engines
. . . RL-10 engines
. . . . RL-10-A-1 engine
. . . . RL-10-A-3 engine
. . . Space Shuttle Main Engine
. . . X-405 engine
. . . XLR-99 engine
. . . YLR-91-AJ-1 engine
. . M-100 engine
. . microrocket engines
. . . Orbit Maneuvering Engine (Space Shuttle)
. . nozzleless rocket engines
. . nuclear engine for rocket vehicles
. . nuclear ramjet engines
. . nuclear rocket engines
. . . nuclear lightbulb engines
. . restartable rocket engines
. . retrorocket engines
. . . BE-3 engine
. . reusable rocket engines
. . solid propellant rocket engines
. . . Algol engine
. . . apogee boost motors
. . . ASROC engine
. . . Hercules engine
. . . M-46 engine
. . . M-55 engine
. . . M-56 engine
. . . M-57 engine
. . . Nike booster rocket engines
. . . P-1 engine
. . . SL-3 rocket engine
. . . Space Shuttle Boosters
. . . . Advanced Solid Rocket Motor (STS)
. . . SYNCOM apogee engines
. . . TX-77 engine
. . . TX-354 engine
. . . X-248 engine
. . . X-254 engine
. . . X-258 engines
. . . . X-258-B1 engine
. . . X-259 engine
. . . XM-33 engine
. . sustainer rocket engines
. . turborocket engines
. . ullage rocket engines
. . upper stage rocket engines
. . Vernier engines
. . . control rockets
. . . SYNCOM apogee engines
. . aerospike engines
RT aircraft engines
axial modes
burning time
dump combustors
ejectors
exhaust nozzles
expendable stages (spacecraft)
heavy lift launch vehicles
hybrid propulsion
ignition systems
internal combustion engines
jet engines
jet propulsion
laser propulsion
launch vehicles
Lunar Module Ascent Stage
magnetoplasmadynamics
matter-antimatter propulsion
missile configurations
missiles
multistage rocket vehicles
negative matter propulsion
post boost propulsion system
∞ propellant actuated devices
propellant explosions
refractories
reusable launch vehicles
RIFT (reactor in flight test)
∞ rockets
single stage rocket vehicles
solid rocket propellants
spacecraft components
spacecraft propulsion
spacecraft structures
thrust
thrust vector control
∞ thrustors
thrust-weight ratio

rocket exhaust
GS plumes
. **rocket exhaust**
RT aerospike engines
base heating
combustion products
exhaust clouds
exhaust gases
exhaust systems
jet exhaust

rocket firing
GS firing (igniting)
. **rocket firing**
. . retrofiring
RT burning time
detonation
liftoff (launching)
static firing
test firing

rocket flight
RT climbing flight
coasting flight
∞ flight
flight paths
horizontal flight
hypersonic flight
meteorological flight
space flight
suborbital flight
supersonic flight
trajectories
transonic flight
vertical flight

rocket l.. schers
DEF Devices for launching rockets.
GS launchers
. **rocket launchers**
. . rocket catapults
RT ground support equipment
gun launchers
launch vehicles
launching
launching sites
missile launchers
∞ rockets
rockoons
sea launching

rocket launching
UF *blastoff*
GS launching
. **rocket launching**
. . liftoff (launching)
. . lunar launch
. . orbital launching
RT exhaust clouds
launch vehicles
launch windows
launchers
spacecraft launching

rocket linings
DEF In solid rockets, the layers of inhibiters applied to the inner surface of the chamber holding the grain.
GS linings
. **rocket linings**
RT bonded joints
engine parts
refractories

rocket motor cases
USE rocket engine cases

rocket nose cones
GS cones
. nose cones
. . rocket nose cones
forebodies
. noses (forebodies)
. . nose cones
. . . rocket nose cones
RT ablative nose cones

rocket nozzles
DEF The exhaust nozzles of rockets.
GS rocket nozzles
. dual thrust nozzles
RT aerospike engines
annular nozzles
carbon-phenolic composites
conical nozzles
convergent-divergent nozzles
divergent nozzles
hypersonic nozzles
nozzle inserts
nozzleless rocket engines
∞ nozzles
plug nozzles
skirts
spike nozzles
supersonic nozzles

rocket oxidizers
UF *propellant oxidizers*
GS oxidizers
. rocket oxidizers
. . FLOX
. . TAGN
RT cryogenic fluids
Domino propellants
high energy oxidizers
hydrogen peroxide
liquid oxidizers
liquid oxygen
nitrogen tetroxide
nitronium perchlorate
TATB
tetrafluorohydrazine

rocket planes
GS rocket vehicles
. rocket planes
. . X-1 aircraft
. . X-2 aircraft
. . X-15 aircraft
RT aerospace planes
∞ aircraft
boostglide vehicles
research aircraft

rocket propellant tanks
USE propellant tanks

rocket propellants
DEF Agents used for consumption or combustion in rockets and from which the rockets derive their thrust, such as fuels, oxidizers, additives, catalysts or any compounds or mixtures of these. Used for multipropellants.
UF *multipropellants*
GS propellants
. rocket propellants
. . gaseous rocket propellants
. . liquid rocket propellants
. . . cryogenic rocket propellants
. . . gelled rocket propellants
. . . hypergolic rocket propellants
. . . monopropellants
. . . . aerozine
. . . RP-1 rocket propellants
. . . slurry propellants
. . . . slush hydrogen
. . nitramine propellants
. . solid rocket propellants
. . . double base rocket propellants
. . . HMX
. . . HTPB propellants
. . . metal propellants
. . TAGN
. . TATB
RT ascent propulsion systems
auxiliary propulsion
fuels
hydrazines
hydrocarbon fuels
missiles
propellant binders
propellant consumption
propellant storage
propulsion
solid propellants
specific impulse
storable propellants
thrust
torpedo engines

rocket propelled sleds
GS surface vehicles
. sleds
. . rocket propelled sleds
RT Javelin rocket vehicle
∞ test equipment

rocket sondes
USE sounding rockets

rocket sounding
GS sounding
. rocket sounding
RT acoustic sounding
atmospheric sounding
barium ion clouds
in situ measurement
ionospheric sounding
Judi-Dart rocket
microwave sounding
satellite sounding
sounding rockets
Vertikal rockets

rocket test facilities
GS test facilities
. rocket test facilities
RT engine tests
test firing
test ranges
test stands

rocket thrust
DEF The thrust of a rocket engine usually expressed in pounds.
GS thrust
. rocket thrust
. . retrothrust
RT high thrust
jet thrust
liftoff (launching)
low thrust
low thrust propulsion
microthrust
propulsion system performance
specific impulse
static thrust
thrust loads
thrust termination
variable thrust

rocket vehicles
DEF Vehicles propelled by rocket engines, used to place satellites in orbit, place missiles on target or carry passengers over rails as on rocket sleds.
GS rocket vehicles
. Arcon rocket vehicle
. Blue Streak launch vehicle
. Blue Streak missile
. Centaur launch vehicle
. . Atlas Centaur launch vehicle
. Folding Fin aircraft rocket vehicle
. hovering rocket vehicles
. Meteor 1 rocket vehicle
. multistage rocket vehicles
. . Ablestar launch vehicle
. . Antares rocket vehicle
. . Argo rocket vehicles
. . Astrobee rocket vehicles
. . . Astrobee 1500 rocket vehicle
. . Athena rocket vehicle
. . Atlas launch vehicles
. . . Atlas Able 5 launch vehicle
. . . Atlas Agena B launch vehicle
. . . Atlas Agena launch vehicles
. . . Atlas Centaur launch vehicle
. . . Atlas SLV-3 launch vehicle
. . Berenice rocket vehicle
. . Black Knight rocket vehicle
. . Blue Scout rocket vehicle
. . Diamant launch vehicle
. . Eldo launch vehicle
. . EXOS sounding rocket
. . Jaguar rocket vehicle
. . Javelin rocket vehicle
. . Juno launch vehicles
. . . Juno 1 launch vehicle
. . . Juno 2 launch vehicle
. . Jupiter C rocket vehicle
. . Kappa rocket vehicles
. . . Kappa 8 rocket vehicle
. . . Kappa 9 rocket vehicle
. . Lambda rocket vehicles
. . Little Joe 2 launch vehicle
. . Nike rocket vehicles
. . . Nike-Apache rocket vehicle
. . . Nike-Cajun rocket vehicle
. . . Nike-Hydac rocket vehicle
. . . Nike-Iroquois rocket vehicle
. . . Nike-Javelin rocket vehicle
. . . Nike-Tomahawk rocket vehicle
. . Nova launch vehicles
. . Pegasus air-launched booster
. . Phoenix sounding rocket
. . RAM B launch vehicle
. . Rubis rocket vehicle
. . Saturn launch vehicles
. . . Saturn 1 launch vehicles
. . . . Saturn 1 SA-1 launch vehicle
. . . . Saturn 1 SA-10 launch vehicle
. . . . Saturn 1 SA-2 launch vehicle
. . . . Saturn 1 SA-3 launch vehicle
. . . . Saturn 1 SA-4 launch vehicle
. . . . Saturn 1 SA-5 launch vehicle
. . . . Saturn 1 SA-6 launch vehicle
. . . . Saturn 1 SA-7 launch vehicle
. . . . Saturn 1 SA-8 launch vehicle
. . . . Saturn 1 SA-9 launch vehicle
. . . Saturn 1B launch vehicles
. . . Saturn 2 launch vehicles
. . . Saturn 5 launch vehicles
. . . Saturn D launch vehicle
. . Scout launch vehicle
. . Skylark rocket vehicle
. . Thor launch vehicles
. . . Thor Able rocket vehicle

. . . Thor Agena launch vehicle
. . . Thor Delta launch vehicle
. . Titan launch vehicles
. . . Titan 3 launch vehicle
. . . Titan 4 launch vehicle
. . vanguard 2 launch vehicle
. . Vega launch vehicle
. . WASP sounding rocket
. payload assist module
. rocket planes
. . X-1 aircraft
. . X-2 aircraft
. . X-15 aircraft
. Saturn stages
. . Saturn S-1 stage
. . Saturn S-1B stage
. . Saturn S-1C stage
. . Saturn S-2 stage
. . Saturn S-4 stage
. . Saturn S-4B stage
. single stage rocket vehicles
. . Agena rocket vehicles
. . . Agena A rocket vehicle
. . . Agena B rocket vehicle
. . . Agena C rocket vehicle
. . . Agena D rocket vehicle
. . Arcas rocket vehicles
. . Black Brant sounding rockets
. . . Black Brant 1 sounding rocket
. . . Black Brant 2 sounding rocket
. . . Black Brant 3 sounding rocket
. . . Black Brant 4 sounding rocket
. . . Black Brant 5 sounding rocket
. . Black Knight rocket vehicle
. . Dornier paraglider rocket vehicle
. . Genie rocket vehicle
. . Honest John rocket vehicle
. . Hyte-Star rocket vehicle
. . Little John rocket vehicle
. . Loki rocket vehicle
. . Nomad launch vehicle
. . Veronique rocket vehicles
. . Viking rocket vehicle
. . Zuni rocket vehicle
. sounding rockets
. . Aerobee rocket vehicle
. . Antares rocket vehicle
. . Apache rocket vehicle
. . Arcas rocket vehicles
. . Aries sounding rocket
. . Astrobee rocket vehicles
. . . Astrobee 1500 rocket vehicle
. . Black Brant sounding rockets
. . . Black Brant 1 sounding rocket
. . . Black Brant 2 sounding rocket
. . . Black Brant 3 sounding rocket
. . . Black Brant 4 sounding rocket
. . . Black Brant 5 sounding rocket
. . Cajun rocket vehicle
. . Dornier paraglider rocket vehicle
. . EXOS sounding rocket
. . Jaguar rocket vehicle
. . Judi-Dart rocket
. . Kappa rocket vehicles
. . . Kappa 8 rocket vehicle
. . . Kappa 9 rocket vehicle
. . Lambda rocket vehicles
. . Loki rocket vehicle
. . Petrel sounding rocket
. . Phoenix sounding rocket
. . Skua rocket vehicles
. . Skylark rocket vehicle
. . Venus fly trap rocket vehicle
. . Veronique rocket vehicles
. . Vertikal rockets
. . WASP sounding rocket
. Standard Launch Vehicles
. . Atlas SLV-3 launch vehicle
. . Standard Launch Vehicle 5
. surface to surface rockets
. . Honest John rocket vehicle
. . Little John rocket vehicle
. Thorad launch vehicles
. . Thor Able rocket vehicle
. . Thor Agena launch vehicle
. . Thor Delta launch vehicle
. Titan Centaur launch vehicle
RT acoustic sounding
∞ ballistic vehicles
∞ flight vehicles
HEUS rocket engines
launch vehicles
missile configurations
multiengine vehicles
∞ rockets
Space Processing Applications Rocket
stage separation
test vehicles
Trailblazer 1 reentry vehicle
Trailblazer 2 reentry vehicle
∞ vehicles
∞ winged vehicles
X-17 reentry vehicle

rocket-borne instruments
RT controllers
flight test instruments
∞ instruments
measuring instruments
meteorological instruments
position indicators

rocket-borne photography
GS imagery
. photography
. . **rocket-borne photography**
RT aerial photography
astronomical photography
black and white photography
photomapping
satellite-borne photography
spaceborne photography

∞ rockets
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT air slew missiles
ammunition
escape rockets
heavy lift launch vehicles
incendiary ammunition
launch vehicles
missiles
nuclear ramjet engines
nuclear rocket engines
nuclear weapons
Patriot missile
Petrel sounding rocket
pyrotechnics
reentry
reentry vehicles
rocket catapults
rocket engines
rocket launchers
rocket vehicles
rockoons
space flight
surface to air missiles
surface to surface missiles
surface to surface rockets
torpedoes
warheads
weapon systems
weapons delivery

rockoons
DEF High altitude sounding systems that consist of small solid propellant research rockets carried aloft by large plastic balloons.
RT high altitude balloons
meteorological balloons
ROBIN balloons
rocket launchers
∞ rockets
skyhook balloons

rocks
DEF Naturally formed aggregates of mineral matter occurring in large masses or fragments. Used for stones (rocks).
UF *stones (rocks)*
GS **rocks**
. andesite
. ataxite
. bedrock
. . Baltic Shield (Europe)
. . batholiths
. breccia
. gneiss
. igneous rocks
. . anorthosite
. . basalt
. . diorite
. . dunite
. . eclogite
. . felsite
. . gabbro
. . granite
. . obsidian
. . . moldavite
. . peridotite
. . pumice
. . rhyolite
. . syenite
. . trachyte
. lunar rocks
. . kreep
. metamorphic rocks
. . quartzite
. regolith
. schist
. sedimentary rocks
. . carbonaceous rocks
. . . coal
. . . . anthracite
. . . . lignite
. . . . solvent refined coal
. . limestone
. . sandstones
. . shales
. shatter cones
RT aggregates
bauxite
boreholes
clays
contacts (geology)
crossbedding (geology)
dirt
dolomite (mineral)
Earth resources
effusives
enstatite
folds (geology)
formations
geology
gypsum
inliers (landforms)
karst
landslides
laterites

lava
ledges
lithology
magma
metamorphism (geology)
minerals
nunataks
olivine
outliers (landforms)
paleomagnetism
petrography
petrology
pyroxenes
quartz
reefs
rock intrusions
rock mechanics
serpentine
soils
stratigraphy
tunneling (excavation)

Rockwell hardness
GS mechanical properties
. hardness
. . Rockwell hardness
RT microhardness

Rocky Mountains (North America)
GS landforms
. mountains
. . Rocky Mountains (North America)
RT Canada
United States

rodents
GS animals
. vertebrates
. . mammals
. . . rodents
. . . . guinea pigs
. . . . hamsters
. . . . mice
. . . . jerboas
. . . . pocket mice
. . . . rabbits
. . . . rats
. . . . squirrels
. . . . ground squirrels

rods
GS rods
. control rods
RT bars
billets
directors (antenna elements)
structural members
wire

Roe flux difference splitting scheme
USE **flux difference splitting**

Roentgen satellite
USE **ROSAT mission**

Rogallo wings
USE **flexible wings**
folding structures

roll
DEF The act of rolling; rotational or oscillatory movement of an aircraft or similar body about a longitudinal axis through the body — called roll for any degree of such rotation. The amount of this movement, i.e., the angle of roll.
GS attitude (inclination)
. roll
RT damping
lateral control
lateral oscillation
lateral stability
pitch (inclination)
rollers
∞ rolling
rolling moments
rotation
sideslip
turning flight
wing rock
yaw

roll control
USE **lateral control**

roll forming
GS forming techniques
. roll forming
RT cold working
metal working

roller bearings
GS bearings
. antifriction bearings
. . roller bearings
. . . needle bearings
RT ball bearings
thrust bearings

rollers
RT conveyors
cylindrical bodies
dispensers
distributors
idlers
platens
pulleys
roll
tires
vehicle wheels
wheels

∞ **rolling**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ausforming
flattening
forging
leveling
metal working
roll

rolling contact loads
GS loads (forces)
. contact loads
. . rolling contact loads
. dynamic loads
. . rolling contact loads
RT antifriction bearings
stresses
structural design criteria

rolling moments
DEF Moments that tend to rotate an aircraft, rocket or spacecraft about a longitudinal axis. These moments are considered positive when they tend to depress the starboard side of the body.
GS moments
. stability derivatives
. . rolling moments
RT aerodynamic coefficients
lateral stability
moments of inertia
pitching moments
roll
torque
yawing moments

rollup solar arrays
USE **solar arrays**

ROM devices
USE **read–only memory devices**

Romania
UF *Rumania*
GS nations
. Romania
RT Black Sea
Central Europe
Europe

Ronchi test
DEF An improvement on the Foucault knife–edge test for curved mirrors, in which the knife edge is replaced with a transmission grating with 15 to 80 lines per centimeter, and the pinhole source is replaced with a slit or a section of the same grating.
GS interferometry
. Ronchi test
RT electromagnetic radiation
etalons
gratings (spectra)
interferometers
measuring instruments
optical measurement

roofs
RT buildings
sheaths

room temperature
DEF A temperature in the range of 20 to 30 C (68 to 85 F).
GS temperature
. room temperature
RT ambient temperature
operating temperature

rooms
GS rooms
. clean rooms
. darkrooms
RT compartments
enclosures
∞ lounges

root–mean–square errors
DEF In statistics, the square root of the arithmetic mean of the squares of the deviations of the various items from the arithmetic mean of the whole.
GS errors
. root–mean–square errors
RT error analysis
statistical analysis

∞ **roots**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT plant roots
radicals
roots of equations
wing roots

roots of equations
UF *zero crossings*
RT eigenvalues
∞ equations
existence theorems
matrices (mathematics)
Newton methods
nonlinear equations
polynomials
∞ roots

Rorschach tests
GS psychological tests
. **Rorschach tests**
RT mental health
psychology
∞ tests

ROSAT mission
UF *Roentgen satellite*
GS artificial satellites
. **ROSAT mission**
observatories
. astronomical observatories
. . **ROSAT mission**
RT astronomical satellites
international cooperation
spaceborne astronomy
spaceborne telescopes
x ray astronomy
x ray sources
x ray telescopes

Rosetta mission
(added October 1995)
UF *CNSR*
GS space missions
. asteroid missions
. . **Rosetta mission**
RT comet nuclei
Comet Rendezvous Asteroid Flyby Mission
∞ missions
Near Earth Asteroid Rendezvous Mission
rendezvous trajectories
sampling

rosette shapes
GS shapes
. **rosette shapes**
RT antenna radiation patterns
crystallites
spherulites
strain gages

Roshko prediction
GS predictions
. **Roshko prediction**
RT bluff bodies
laminar flow
Oseen approximation
three dimensional flow

rosin
GS gums (substances)
. **rosin**
RT organic materials

Ross ice shelf
GS regions
. polar regions
. . Antarctic regions
. . . **Ross ice shelf**
. remote regions
. . Antarctic regions
. . . **Ross ice shelf**
Southern Hemisphere
. Antarctic regions
. . **Ross ice shelf**
RT McMurdo sound

Rossby regimes
RT barotropic flow
planetary waves

Rossby waves
USE **planetary waves**

rotary drives
USE **mechanical drives**

rotary engines
DEF A positive displacement engine consisting of a rotor and stator. The control volume which encloses the working fluid during the thermodynamic cycle moves in a generally circular motion rather than a linear motion as in a piston engine.
GS engines
. internal combustion engines
. . **rotary engines**
. . . Wankel engines
RT aircraft engines
automobile engines
piston engines

rotary gyroscopes
GS gyroscopes
. **rotary gyroscopes**
. . fluid rotor gyroscopes
RT gyroscope fluids
gyroscopic stability
rotating bodies

rotary stability
UF *whirl instability*
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . **rotary stability**
. . . . gyroscopic stability
stability
. dynamic stability
. . motion stability
. . . **rotary stability**
. . . . gyroscopic stability
RT airfoil oscillations
directional stability
flow stability
lateral stability
longitudinal stability
rotating bodies
rotation
rotor dynamics

rotary wing aircraft
DEF A heavier–than–air aircraft that depends principally for its support in flight on the lift generated by one or more rotors.
UF *rotorcraft*
GS V/STOL aircraft
. **rotary wing aircraft**
. . autogyros
. . . Avian 2/180 autogiro
. . helicopters
. . . Alouette helicopters
. . . . SA–330 helicopter
. . . SE–3160 helicopter
. . . Bell 214A helicopter
. . . compound helicopters
. . . . S–67 helicopter
. . . H–17 helicopter
. . . heavy lift helicopters
. . . . CH–62 helicopter
. . . light helicopters
. . . . OH–4 helicopter
. . . . OH–5 helicopter
. . . . OH–6 helicopter
. . . . OH–58 helicopter
. . . military helicopters
. . . . AH–1G helicopter
. . . . AH–1S helicopter
. . . . AH–1W helicopter
. . . . AH–63 helicopter
. . . . AH–64 helicopter
. . . . BO–105 helicopter
. . . . CH–3 helicopter
. . . . CH–21 helicopter
. . . . CH–34 helicopter
. . . . CH–46 helicopter
. . . . CH–47 helicopter
. . . . CH–54 helicopter
. . . . CH–62 helicopter
. . . . H–19 helicopter
. . . . H–43 helicopter
. . . . H–53 helicopter
. . . . H–54 helicopter
. . . . H–56 helicopter
. . . . H–60 Helicopter
. . . . HC–3 helicopter
. . . . HH–43 helicopter
. . . . HH–65 helicopter
. . . . OH–4 helicopter
. . . . OH–5 helicopter
. . . . OH–6 helicopter
. . . . OH–13 helicopter
. . . . OH–23 helicopter
. . . . OH–58 helicopter
. . . . P–531 helicopter
. . . . QH–50 helicopter
. . . . S–67 helicopter
. . . . SA–321 helicopter
. . . . SA–330 helicopter
. . . . SH–3 helicopter
. . . . SH–4 helicopter
. . . . Sikorsky Whirlwind helicopter
. . . . UH–1 helicopter
. . . . UH–2 helicopter
. . . . UH–34 helicopter
. . . . UH–60A helicopter
. . . . UH–61A helicopter
. . . . Westland Whirlwind helicopter
. . . . XV–9A aircraft
. . . rigid rotor helicopters
. . . . CH–3 helicopter
. . . . F–28 helicopter
. . . . XH–51 helicopter
. . . S–58 helicopter
. . . S–61 helicopter
. . . tandem rotor helicopters
. . . . CH–46 helicopter
. . . . CH–47 helicopter
. . . . H–25 helicopter
. . . EH–101 helicopter
. . . TH–55 helicopter
. . rotor systems research aircraft
. . tilt rotor aircraft
. . . V–22 aircraft
. . . XV–15 aircraft
RT ∞ aircraft
autorotation
commercial aircraft
lifting rotors
∞ military aircraft
passenger aircraft
rotor stator interactions
short takeoff aircraft
∞ subsonic aircraft
transport aircraft
vertical takeoff aircraft
Weser aircraft
Westland aircraft

rotary wings
UF *helicopter rotors*
hinged rotor blades
GS airfoils
. wings
. . **rotary wings**
. . . circulation control rotors
. . . lifting rotors

. . . . bearingless rotors
. . . rigid rotors
. . . tilting rotors
. . . tip driven rotors
. . . x wing rotors
rotating bodies
. rotors
. . rotary wings
. . . circulation control rotors
. . . lifting rotors
. . . . bearingless rotors
. . . rigid rotors
. . . tilting rotors
. . . tip driven rotors
. . . x wing rotors
RT blade tips
∞ blades
blade–vortex interaction
convertible fan–shaft engines
fan blades
flapping hinges
folding structures
ground resonance
harmonic control
helicopter propeller drive
helicopter tail rotors
lift fans
propeller blades
∞ rotor blades
rotor dynamics
tail rotors
Tilt Rotor Research Aircraft Program
V–22 aircraft
whirl towers

rotating
USE **rotation**

rotating bodies
UF *rotating vehicles*
solid rotation
GS **rotating bodies**
. lunar rotation
. rotating cylinders
. rotating disks
. rotating spheres
. rotors
. . compressor rotors
. . flywheels
. . impellers
. . . pump impellers
. . rotary wings
. . . circulation control rotors
. . . lifting rotors
. . . . bearingless rotors
. . . rigid rotors
. . . tilting rotors
. . . tip driven rotors
. . . x wing rotors
. . tail rotors
. . . helicopter tail rotors
. . tip vanes
. . turbine wheels
RT axes of rotation
∞ bodies
planetary rotation
Roche limit
rotary gyroscopes
rotary stability
rotation
spinning unguided rocket trajectory

rotating cylinders
GS rotating bodies
. **rotating cylinders**
symmetrical bodies
. bodies of revolution
. . cylindrical bodies
. . . **rotating cylinders**
RT Couette flow
∞ cylinders
cylindrical shells
elastohydrodynamics
Magnus effect
shafts (machine elements)
viscometers
viscometry

rotating disks
GS disks (shapes)
. **rotating disks**
rotating bodies
. **rotating disks**
RT accretion disks
counter rotation
Karman–Bodewadt flow
mistuning (turbomachinery)

∞ **rotating electrical machines**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT armatures
commutators
electric hybrid vehicles
electric motors
induction motors
∞ machinery
rotating generators
rotors
servomotors
stators

rotating environments
GS environments
. **rotating environments**
RT artificial gravity
Barany chair
Coriolis effect
high gravity environments
Langley complex coordinator
spacecraft environments
tumbling motion

rotating fluids
GS matter (physics)
. rotating matter
. . **rotating fluids**
. . . rotating liquids
. . . rotating plasmas
RT counter rotation
∞ fluids
Goertler instability
Karman–Bodewadt flow
liquid sloshing
planetary waves
superrotation
Taylor instability
trapped vortices
turbulent flow
vortex sheets
vortices
wing tip vortices

rotating generators
UF *dynamos*
GS electric generators
. **rotating generators**
. . amplidynes
. . dynamometers
. . homopolar generators
. . turbogenerators
. . . ASTEC solar turboelectric generator
RT AC generators
commutators
DC generators
electrostatic generators
∞ generators
∞ rotating electrical machines
turbines
turbomachinery

rotating liquids
UF *liquid rotation*
GS liquids
. **rotating liquids**
matter (physics)
. rotating matter
. . rotating fluids
. . . **rotating liquids**
RT Goertler instability
planetary waves
rotation
trapped vortices
vortices

rotating matter
GS matter (physics)
. **rotating matter**
. . rotating fluids
. . . rotating liquids
. . . rotating plasmas
RT degenerate matter
rotation
spin dynamics

rotating mirrors
GS mirrors
. **rotating mirrors**
RT framing cameras
high speed cameras

rotating plasmas
GS matter (physics)
. rotating matter
. . rotating fluids
. . . **rotating plasmas**
particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **rotating plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **rotating plasmas**
RT drift rate
nonequilibrium plasmas
plasma flux measurement
theta pinch
toroidal plasmas
two fluid models
zeta pinch

rotating shafts
GS shafts (machine elements)
. **rotating shafts**
. . turboshafts

rotating spheres
GS rotating bodies
. **rotating spheres**
symmetrical bodies
. bodies of revolution
. . spheres
. . . **rotating spheres**
RT equators
spherical shells

rotating stalls
RT aerodynamic stalling
boundary layer separation

compressor blades
∞ rotor blades
∞ stalling
turbocompressors

rotating vehicles
USE **rotating bodies**
vehicles

rotation
DEF The motion of a body about some straight line wherein the particles of the body along the line or its extensions have a zero velocity relative to some reference. The line of stationary particles is called the axis of rotation. Used for rotating, whirl, and whirling.
UF *rotating*
whirl
whirling
GS gyration
. **rotation**
. . autorotation
. . corotation
. . counter rotation
. . Earth rotation
. . galactic rotation
. . image rotation
. . lunar rotation
. . molecular rotation
. . muon spin rotation
. . planetary rotation
. . satellite rotation
. . stellar rotation
. . . solar rotation
. . superrotation
RT angular acceleration
angular velocity
axes of rotation
circulation
coning motion
Coriolis effect
cross polarization
Faraday effect
libration
∞ motion
nutation
pitch (inclination)
polarization (spin alignment)
polarization (waves)
precession
revolving
roll
rotary stability
rotating bodies
rotating liquids
rotating matter
rotons
torque
vortex avoidance
vortices
yaw

rotational flow
USE **fluid flow**
vortices

rotational spectra
(added July 1989)
GS spectra
. molecular spectra
. . **rotational spectra**
RT absorption spectra
line spectra
molecular excitation
molecular rotation
molecular spectroscopy
rotational states
vibrational spectra

rotational states
(added December 1993)
SN (LIMITED TO MOLECULAR ENERGY LEVELS – EXCLUDES ROTATIONAL DYNAMICS OF VEHICLES OR OTHER BODIES)
GS level (quantity)
. energy levels
. . molecular energy levels
. . . **rotational states**
RT molecular excitation
rotational spectra

Rotifera
DEF A phylum of multicellular animals in the subkingdom Eumatazoa.
GS animals
. invertebrates
. . **Rotifera**
microorganisms
. **Rotifera**
RT worms

rotochutes
GS parachutes
. **rotochutes**
RT autorotation

rotons
GS fluid mechanics
. fluid dynamics
. . **rotons**
RT activation energy
excitation
photons
rotation

rotor aerodynamics
GS fluid mechanics
. fluid dynamics
. . gas dynamics
. . . aerodynamics
. . . . **rotor aerodynamics**
RT flapping
flapping hinges
ground resonance
rotor body interactions
rotor dynamics
rotor stator interactions
rotors
whirl towers

∞ **rotor blades**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT helicopter tail rotors
mistuning (turbomachinery)
rotary wings
rotating stalls
rotor blades (turbomachinery)
tail rotors
x wing rotors

rotor blades (turbomachinery)
UF *impeller blades*
GS turbomachine blades
. **rotor blades (turbomachinery)**
RT airfoils
blade tips
∞ blades
compressor blades
compressor rotors
impellers
mistuning (turbomachinery)
∞ rotor blades
rotor stator interactions
rotors
stator blades
turbine blades

rotor body interactions
DEF Aerodynamic interactions between a helicopter rotor and a body.
RT aerodynamic characteristics
aerodynamic configurations
helicopter design
rotor aerodynamics
rotor stator interactions

rotor disks
USE **turbine wheels**

rotor dynamics
(added July 1989)
UF *rotordynamics*
RT dynamic characteristics
dynamic response
dynamic stability
∞ dynamics
rotary stability
rotary wings
rotor aerodynamics
rotors
structural vibration
turbomachinery

rotor hubs
USE **hubs**
rotors

rotor lift
GS aerodynamic characteristics
. lift
. . **rotor lift**
aerodynamic forces
. lift
. . **rotor lift**
dynamic characteristics
. lift
. . **rotor lift**
RT distribution (property)

rotor speed
GS rates (per time)
. **rotor speed**
velocity
. **rotor speed**
RT angular velocity
high speed
labyrinth seals
tip speed

rotor stator interactions
(added June 1995)
DEF Aerodynamic interaction between a rotor and a stator.
RT aerodynamic interference
interactional aerodynamics
rotary wing aircraft
rotor aerodynamics
rotor blades (turbomachinery)
rotor body interactions
stator blades
structural stability
supersonic turbines
surface noise interactions
tilt rotor aircraft
turbine blades

rotor systems research aircraft
GS research vehicles
. research aircraft
. . **rotor systems research aircraft**
V/STOL aircraft
. rotary wing aircraft

. . rotor systems research aircraft
RT ∞ aircraft
aircraft design
helicopters
NASA programs
∞ systems

rotorcraft
USE rotary wing aircraft

rotordynamics
USE rotor dynamics

rotors
UF *rotor hubs*
GS rotating bodies
. rotors
. . compressor rotors
. . flywheels
. . impellers
. . . pump impellers
. . rotary wings
. . . circulation control rotors
. . . lifting rotors
. . . . bearingless rotors
. . . rigid rotors
. . . tilting rotors
. . . tip driven rotors
. . . x wing rotors
. . tail rotors
. . . helicopter tail rotors
. . tip vanes
. . turbine wheels
RT airfoils
armatures
centrifugal compressors
heavy lift airships
mistuning (turbomachinery)
∞ rotating electrical machines
rotor aerodynamics
rotor blades (turbomachinery)
rotor dynamics
stators
turbines
turbocompressors
turbomachine blades
turboshafts
wheels
wings

roughness
GS roughness
. sea roughness
. surface roughness
RT coarseness
contours
flatness
mechanical properties
motion stability
profilometers
smoothing
surface properties

round trip trajectories
GS trajectories
. round trip trajectories
. . circumlunar trajectories
RT Earth–Moon trajectories
interorbital trajectories
interplanetary flight
interplanetary trajectories
moon–Earth trajectories
orbital mechanics
spacecraft trajectories
swingby technique

Rouse belts
RT ∞ belts

cones (volcanoes)
earthquakes
geological faults
Mars volcanoes
seismology
tremors
volcanoes
volcanology

routes
RT air traffic control
flight plans
∞ paths
site selection
transportation

∞ **routines**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT computer programs
computer systems programs
data conversion routines
disk operating system (DOS)
input/output routines
merging routines
operating systems (computers)
user manuals (computer programs)

Rover project
GS programs
. NASA programs
. . NASA space programs
. . . Rover project
. projects
. . Rover project
. space programs
. . NASA space programs
. . . Rover project
RT KIWI reactors
nuclear engine for rocket vehicles
nuclear propulsion
nuclear reactors
RIFT (reactor in flight test)
rocket engine design
spacecraft propulsion

roving vehicles
UF *extraterrestrial roving vehicles*
GS surface vehicles
. roving vehicles
. . lunar roving vehicles
. . . Lunokhod lunar roving vehicles
. . . manned lunar surface vehicles
. . Marsokhod Mars roving vehicles
RT Mars sample return missions
planetary landing
planetary surfaces
research vehicles
toroidal wheels
∞ vehicles

∞ **rovings**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT composite materials
webs (sheets)
yarns

Rowland circles
RT gratings (spectra)
optical filters

RP–1 rocket propellants
GS propellants
. rocket propellants
. . liquid rocket propellants
. . . RP–1 rocket propellants
RT JP–4 jet fuel
kerosene

RPV
USE remotely piloted vehicles

RS codes
USE Reed–Solomon codes

RTM (composite materials)
USE resin transfer molding

RTV–40 rubber (trademark)
GS elastomers
. rubber
. . synthetic rubbers
. . . silicone rubber
. . . . RTV–40 rubber (trademark)
. . . vulcanized elastomers
. . . . RTV–40 rubber (trademark)

RTV–60 rubber (trademark)
GS elastomers
. rubber
. . synthetic rubbers
. . . silicone rubber
. . . . RTV–60 rubber (trademark)
. . . vulcanized elastomers
. . . . RTV–60 rubber (trademark)

Ruanda–Urundi
USE Burundi
Rwanda

rubber
DEF A material that is capable of recovering from large deformations quickly and forcibly, and can be, or already is modified to a state in which it is essentially insoluble (but can swell) in boiling solvent such as benzene, methyl ethyl ketone, and ethanol–toluene azeotrope.
GS elastomers
. rubber
. . synthetic rubbers
. . . Adiprene (trademark)
. . . Buna (trademark)
. . . silicone rubber
. . . . RTV–40 rubber (trademark)
. . . . RTV–60 rubber (trademark)
. . . Viton rubber (trademark)
. . . vulcanized elastomers
. . . . RTV–40 rubber (trademark)
. . . . RTV–60 rubber (trademark)
. . . chloroprene resins
RT guayule
gums (substances)
latex
organic materials
polyisoprenes

rubber coatings
GS coatings
. rubber coatings
RT paints
protective coatings

rubidium
GS chemical elements
. alkali metals
. . rubidium
. . . rubidium isotopes
. . . . rubidium 86
metals
. alkali metals
. . rubidium
. . . rubidium isotopes
. . . . rubidium 86

rubidium 86
GS chemical elements
. alkali metals
. . rubidium
. . . rubidium isotopes
. . . . **rubidium 86**
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . **rubidium 86**
. . . rubidium isotopes
. . . . **rubidium 86**
metals
. alkali metals
. . rubidium
. . . rubidium isotopes
. . . . **rubidium 86**

rubidium compounds
RT∞ alkali metal compounds
∞ chemical compounds
∞ metal compounds

rubidium isotopes
GS chemical elements
. alkali metals
. . rubidium
. . . **rubidium isotopes**
. . . . rubidium 86
. nuclides
. . isotopes
. . . **rubidium isotopes**
. . . . rubidium 86
metals
. alkali metals
. . rubidium
. . . **rubidium isotopes**
. . . . rubidium 86

Rubis rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . **Rubis rocket vehicle**
RT solid propellant rocket engines

ruby
RT aluminum oxides
crystals

ruby lasers
GS electronic equipment
. solid state devices
. . solid state lasers
. . . **ruby lasers**
stimulated emission devices
. lasers
. . solid state lasers
. . . **ruby lasers**
RT pulsed lasers
Q switched lasers
Verneuil process

rudders
GS control surfaces
. **rudders**
. . aerial rudders
. . marine rudders
RT airfoils
fins
pintles
stabilizers (fluid dynamics)
sweptback tail surfaces
tabs (control surfaces)
tail assemblies
tail surfaces
trapezoidal tail surfaces

ruggedness
RT durability
∞ high resistance
mechanical properties
∞ rigidity

ruler method
RT∞ methodology

rules
GS **rules**
. flight rules
. . instrument flight rules
. . visual flight rules
. Palmgren–Miner rule
. phase rule
. selection rules (nuclear physics)
. sum rules
. Whitham rule
RT laws
patent policy
policies
procurement policy
regulations
sea law

Rumania
USE **Romania**

run time (computers)
RT computer programming
computers
time sharing

Runge–Kutta method
DEF A method for the numerical solution of an ordinary differential equation.
GS analysis (mathematics)
. numerical analysis
. . numerical integration
. . . **Runge–Kutta method**
. real variables
. . measure and integration
. . . numerical integration
. . . . **Runge–Kutta method**
RT∞ methodology

running
RT∞ operations
physical exercise

runoffs
USE **drainage**

runway alignment
SN (ALIGNMENT WITH RUNWAYS—NOT ALIGNMENT OF RUNWAYS)
RT aircraft landing
takeoff runs

runway conditions
GS conditions
. **runway conditions**
RT aviation meteorology
ice
runways
slush
surface roughness
water
weather

runway lights
GS landing aids
. airport lights
. . **runway lights**
lighting equipment
. luminaires
. . airport lights
. . . **runway lights**
RT approach control
∞ flares
∞ markers
runways
searchlights
visual control

runways
DEF A defined rectangular area on a land airport prepared for the landing and takeoff run of aircraft along its length.
RT airfield surface movements
airports
landing
landing aids
landing mats
landing sites
pavements
runway conditions
runway lights
∞ strip
takeoff
taxiing

rupturing
RT∞ blisters
bursts
cracking (fracturing)
disrupting
failure
fracture mechanics
metal fatigue
self sealing
structural strain
tearing

rural areas
RT agriculture
farmlands
grasslands
land
megalopolises
rangelands
regional planning
residential areas
suburban areas
wilderness

rural land use
GS land use
. **rural land use**
RT agriculture
conservation
∞ development
Earth resources
farmlands
grasslands
grazing
Great Plains Corridor (North America)
land
land management
orchards
rangelands
regional planning
sites

Russia
USE **Russian Federation**

Russian Federation
(added August 1993)
UF *Russia*
GS nations
. **Russian Federation**
RT Asia
Automatic Universal Orbiting Stations
Europe

Moscow
Russian Space Program

Russian Space Program
(added September 1994)
GS programs
. space programs
. . European space programs
. . . **Russian Space Program**
. . . . Proton launch vehicle
RT Commonwealth of Independent States
cosmonauts
Energiya launch vehicle
GLONASS
Granat satellite
international cooperation
Kvant modules
Russian Federation
Soviet satellites
Soviet spacecraft
U.S.S.R. space program
Vertikal rockets

rust fungi
UF *rusts (botany)*
GS plants (botany)
. fungi
. . **rust fungi**
RT blight
∞ mold
parasitic diseases
plant diseases

rusting
GS chemical reactions
. oxidation
. . **rusting**
corrosion
. **rusting**
RT atmospheric effects
chemical attack
coatings
corrosion resistance
degradation
desensitizing
deterioration
hot corrosion
metal–water reactions
oxidation resistance
passivity
scale (corrosion)
weathering

rusts (botany)
USE **rust fungi**

ruthenium
GS chemical elements
. ruthenium
. . ruthenium isotopes
metals
. noble metals
. . ruthenium
. . . ruthenium isotopes
. transition metals
. . ruthenium
. . . ruthenium isotopes

ruthenium 106
USE **ruthenium isotopes**

ruthenium alloys
GS alloys
. **ruthenium alloys**

ruthenium compounds
RT∞ chemical compounds
∞ metal compounds
transition metals

ruthenium isotopes
UF *ruthenium 106*
GS chemical elements
. nuclides
. . isotopes
. . . **ruthenium isotopes**
. ruthenium
. . **ruthenium isotopes**
metals
. noble metals
. . ruthenium
. . . **ruthenium isotopes**
. transition metals
. . ruthenium
. . . **ruthenium isotopes**

rutherfordium
(added November 1994)
GS chemical elements
. **rutherfordium**
RT∞ elements

rutile
DEF A mineral form of titanium oxide (TiO_2) (tetragonal crystallization), but usually produced chemically for use in ceramics and other products.
GS chalcogenides
. oxides
. . metal oxides
. . . titanium oxides
. . . . **rutile**
titanium compounds
. titanium oxides
. . **rutile**
RT anatase
coesite
cross relaxation
minerals
pigments
stishovite

Rwanda
UF *Ruanda–Urundi*
GS nations
. **Rwanda**
RT Africa
Burundi

Ryan aircraft
GS **Ryan aircraft**
. Firebee 2 target drone aircraft
. X–13 aircraft
. XC–142 aircraft
. XV–5 aircraft
. XV–8A aircraft
RT∞ aircraft

Rydberg series
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . line spectra
. . . . **Rydberg series**
RT absorption spectra
atomic spectra
electron transitions
emission spectra
H lines
hydrogen

S

S band
USE **superhigh frequencies**
ultrahigh frequencies

S curves
GS geometry
. curves (geometry)
. . **S curves**
. . . Gompertz curves
. Euclidean geometry
. . analytic geometry
. . . **S curves**
. . . . Gompertz curves

S glass
GS glass
. E glass
. . **S glass**
RT composite materials
glass fiber reinforced plastics
glass fibers
silicon dioxide

S matrix theory
UF *scattering matrix*
RT operators (mathematics)
scattering cross sections
∞ theories

S stars
GS celestial bodies
. **stars**
. . late stars
. . . cool stars
. . . . **S stars**
RT asymptotic giant branch stars
giant stars
M stars
Mira variables
red giant stars

S waves
DEF Waves in an elastic media which cause an element of the medium to change its shape without a change in volume. Mathematically, S waves are ones whose velocity field has zero divergence. Used for secondary waves, shear disturbances, and shear waves.
UF *secondary waves*
shear disturbances
shear waves
GS elastic waves
. **S waves**
. . SH waves
RT crustal fractures
dilatational waves
P waves
polarized elastic waves
Rayleigh waves
seismic waves
surface waves
transverse waves

S-2 aircraft
UF *US-2A aircraft*
GS antisubmarine warfare aircraft
. **S-2 aircraft**
monoplanes
. **S-2 aircraft**
utility aircraft
. **S-2 aircraft**
RT ∞ aircraft

S-3 aircraft
UF *ES-3A aircraft*
KS-3 aircraft
GS antisubmarine warfare aircraft
. **S-3 aircraft**
jet aircraft
. **S-3 aircraft**
Lockheed aircraft
. **S-3 aircraft**
monoplanes
. **S-3 aircraft**
RT ∞ aircraft
∞ military aircraft

S-3 satellite
USE **Explorer 12 satellite**

S-6 satellite
USE **Explorer 17 satellite**

S-16 satellite
USE **OSO-1**

S-17 satellite
USE **OSO-2**

S-18 satellite
USE **OAO**

S-27 satellite
USE **Alouette 1 satellite**

S-49 satellite
USE **OGO-A**

S-50 satellite
USE **OGO-C**

S-51 satellite
USE **Ariel 1 satellite**

S-52 satellite
USE **Ariel 2 satellite**

S-57 satellite
USE **OSO-C**

S-58 helicopter
UF *Sikorsky S-58 helicopter*
GS Sikorsky aircraft
. **S-58 helicopter**
transport aircraft
. **S-58 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **S-58 helicopter**
RT CH-34 helicopter
UH-34 helicopter

S-61 helicopter
UF *Sikorsky S-61 helicopter*
GS Sikorsky aircraft
. **S-61 helicopter**
transport aircraft
. **S-61 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **S-61 helicopter**
RT ∞ aircraft
antisubmarine warfare aircraft
CH-3 helicopter
SH-3 helicopter
SH-4 helicopter
water takeoff and landing aircraft

S-64 helicopter
USE **CH-54 helicopter**

S-66 satellite
USE **Beacon Explorer A**

S-67 helicopter
UF *Sikorsky S-67 helicopter*
GS Sikorsky aircraft
. **S-67 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . compound helicopters
. . . . **S-67 helicopter**
. . . military helicopters
. . . . **S-67 helicopter**
RT ∞ aircraft

S-74 satellite
USE **Explorer 19 satellite**

S-A-W devices
USE **surface acoustic wave devices**

S-N diagrams
UF *fatigue diagrams*
GS diagrams
. **S-N diagrams**
RT bending fatigue
cyclic loads
fatigue (materials)
fatigue life
fatigue tests
metal fatigue
stress analysis
stress cycles
stress measurement
stress ratio

SA-321 helicopter
UF *Sud Aviation SA-321 helicopter*
GS Sud Aviation aircraft
. **SA-321 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **SA-321 helicopter**
RT ∞ aircraft

SA-330 helicopter
UF *Sud Aviation SA-330 helicopter*
GS Sud Aviation aircraft
. Alouette helicopters
. . **SA-330 helicopter**
transport aircraft
. **SA-330 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . Alouette helicopters
. . . . **SA-330 helicopter**
. . . military helicopters
. . . . **SA-330 helicopter**
RT ∞ aircraft

Saab 105 aircraft
GS jet aircraft
. turbofan aircraft
. . **Saab 105 aircraft**
light aircraft
. **Saab 105 aircraft**
monoplanes
. **Saab 105 aircraft**
Saab aircraft
. **Saab 105 aircraft**
utility aircraft

. **Saab 105 aircraft**
RT∞ aircraft
passenger aircraft

Saab 37 aircraft
GS attack aircraft
. fighter aircraft
. . **Saab 37 aircraft**
jet aircraft
. turbofan aircraft
. . **Saab 37 aircraft**
Saab aircraft
. **Saab 37 aircraft**
supersonic aircraft
. **Saab 37 aircraft**
RT∞ aircraft
canard configurations
Harrier aircraft

Saab aircraft
GS **Saab aircraft**
. Saab 37 aircraft
. Saab 105 aircraft
RT∞ aircraft

Sabatier reaction
GS chemical reactions
. **Sabatier reaction**
RT photographic film

Sabot projectiles
DEF Projectiles having devices fitted around or in back of the projectiles in gun barrels or launching tubes to support or protect the projectiles or to prevent the escape of gas ahead of it. The sabot separates from the projectile after launching.
GS projectiles
. **Sabot projectiles**
RT artillery
fragmentation
gun launchers
guns (ordnance)

sabotage
DEF Deliberate destructive action that may be directed against property, processes, systems, organizations, governments, or people and that is intended to prevent a process, undermine a group, or interfere with progress towards a goal.
RT accidents
air defense
damage
deactivation
disasters
hazards
injuries
prevention
safety
space law
wreckage

Sabre aircraft
USE **F-86 aircraft**

Sabreliner aircraft
USE **T-39 aircraft**

Saccadic eye movements
GS eye movements
. **Saccadic eye movements**
RT foveas
∞ motion
visual fields

saccharides
USE **carbohydrates**

saccharomyces
GS plants (botany)
. fungi
. . **saccharomyces**

Sacramento Valley (CA)
GS valleys
. **Sacramento Valley (CA)**
RT California
river basins

saddle points
GS **saddle points**
. saddle points (game theory)
RT curve fitting
game theory
minimax technique

saddle points (game theory)
GS game theory
. **saddle points (game theory)**
saddle points
. **saddle points (game theory)**
RT operations research
saddles
∞ theories

saddles
RT saddle points (game theory)

saddles (supports)
GS structural members
. **saddles (supports)**
supports
. **saddles (supports)**

Saenger space transportation system
(added September 1995)
UF *Sanger space transportation system*
GS transportation
. space transportation
. . space transportation system
. . . **Saenger space transportation system**
RT aerospace planes
German space program
piggyback systems
ramjet engines
reusable spacecraft

Safeguard system
GS weapon systems
. missile systems
. . **Safeguard system**
RT antimissile defense
ballistic missiles
military technology
missile defense
Sentinel system
∞ systems

safety
GS **safety**
. aerospace safety
. aircraft safety
. flight safety
. industrial safety
. range safety
. reactor safety
RT accident prevention
accidents
air bag restraint devices
crashes
∞ detectors
emergency life sustaining systems
energy policy
explosions
fire prevention
fireproofing
fires
hazards
prevention
protection
sabotage
∞ storage
vortex avoidance
warning
warning systems

safety devices
GS **safety devices**
. abort apparatus
. air bag restraint devices
. arresting gear
. ejection seats
. . flying ejection seats
. escape capsules
. escape rockets
. helmets
. seat belts
RT accident prevention
accident proneness
accidents
aircraft safety
ambulances
antiskid devices
automobile accidents
∞ barriers
chemical defense
deflectors
∞ devices
emergency life sustaining systems
enclosures
∞ equipment
fail-safe systems
fire prevention
flame deflectors
flight safety
gates (openings)
guards (shields)
harnesses
hazards
human factors engineering
landing aids
pressure suits
protection
protective clothing
protectors
radiation measuring instruments
radiation shielding
shielding
smoke detectors
space suits
spacecraft shielding
warning
warning systems

safety factors
RT accident proneness
aerospace safety
design analysis
escape systems
hazards
health physics
reliability
stability

safety management
GS management
. **safety management**
RT accident prevention
aerospace safety
Assured Crew Return Vehicle
education
fail-safe systems
fire prevention

guards (shields)
hazards
human factors engineering
production management
warning systems

SAGE air defense system
GS air defense
. **SAGE air defense system**
RT ∞ systems

SAGE satellite
DEF Spacecraft for the study of stratospheric aerosols and gases. Used for Stratospheric Aerosol & Gas Experiment.
UF *Stratospheric Aerosol & Gas Experiment*
GS artificial satellites
. **SAGE satellite**
RT aerosols
ozone

Saginaw Bay (MI)
GS bays (topographic features)
. **Saginaw Bay (MI)**
RT inlets (topography)
Lake Huron
Michigan
river basins

Sagittarius constellation
GS constellations
. **Sagittarius constellation**

Sagnac effect
DEF A phase shift (and consequent measurable rotation rate) caused by nonreciprocity (different optical path lengths) of two counter-propagating light waves traveling in the same coil in a fiber optic gyro or ring interferometer.
GS phase shift
. **Sagnac effect**
RT angular velocity
astronomical interferometry
etalons
fiber optics
interferometers
interferometry
laser gyroscopes
laser interferometry
light transmission
nonlinear optics
optical gyroscopes
optical paths
speckle interferometry
wave propagation

Saha equations
RT arc heating
electric arcs
∞ equations
ion density (concentration)
ionization potentials
temperature

Sahara Desert (Africa)
GS land
. deserts
. . **Sahara Desert (Africa)**
RT Africa
arid lands
barren land
desertification
dunes
remote regions

SAIL project
UF *Shuttle Avionics Integration Laboratory*
GS programs
. NASA programs
. . NASA space programs
. . . **SAIL project**
. projects
. . **SAIL project**
. space programs
. . NASA space programs
. . . **SAIL project**
RT Earth Viewing Applications Laboratory
laboratories
space laboratories
space shuttles

sailplanes
USE **gliders**

sails
GS **sails**
. magnetic sails
. sailwings
. solar sails
RT fins
gliders
tail assemblies

sailwings
UF *Princeton sailwings*
GS folding structures
. **sailwings**
sails
. **sailwings**
RT gliders
hang gliders

Saint Elmo fire
GS electric current
. electric discharges
. . **Saint Elmo fire**
RT fires

Saint Venant flexure problem
USE **Saint Venant principle**

Saint Venant principle
UF *Saint Venant flexure problem*
St Venant flexure problem
RT plastic deformation
static deformation
static loads
stress analysis
stress concentration
temperature inversions

salicylates
GS **salicylates**
. sodium salicylates
RT acetylsalicylic acid
drugs
esters

salinity
GS chemical properties
. **salinity**
RT alkalinity
brines
core sampling
desalinization
ocean currents
oceanographic parameters
sea water
soil sampling

saliva
GS body fluids
. **saliva**
RT digestive system
mucus
salivary glands

salivary glands
UF *parotid gland*
GS anatomy
. digestive system
. . **salivary glands**
. glands (anatomy)
. . **salivary glands**
RT mouth
saliva

salmonella
GS microorganisms
. bacteria
. . **salmonella**

salt baths
GS baths
. **salt baths**
RT brines
heat treatment
molten salts

salt beds
DEF Deposits of sodium chloride and other salts resulting from the evaporation and/or precipitation of ancient oceans.
GS geology
. beds (geology)
. . **salt beds**
landforms
. beds (geology)
. . **salt beds**
RT brines
bromides
chlorides
flats (landforms)
sodium chlorides

salt flats
USE **flats (landforms)**

salt spray tests
GS chemical tests
. **salt spray tests**
environmental tests
. corrosion tests
. . **salt spray tests**
RT corrosion
corrosion resistance
spray ingestion
stress corrosion
∞ tests

Salton Sea (CA)
GS **seas**
. **Salton Sea (CA)**
RT California
deserts

∞ **salts**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT **halites**
inorganic compounds
molten salts
organic charge transfer salts
organic compounds
sodium chlorides
sulfonates

Salyut space station
GS artificial satellites
. space stations
. . **Salyut space station**
manned spacecraft
. **Salyut space station**
Soviet spacecraft
. **Salyut space station**

stations
. space stations
. . Salyut space station
RT Soyuz spacecraft
space bases
space laboratories
spacecraft docking
U.S.S.R. space program

Samaritan aircraft
USE C-131 aircraft

samarium
GS chemical elements
. rare earth elements
. . samarium
. . . samarium isotopes
metals
. rare earth elements
. . samarium
. . . samarium isotopes

samarium compounds
GS rare earth compounds
. samarium compounds
RT ∞ chemical compounds
∞ metal compounds

samarium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . samarium isotopes
. rare earth elements
. . samarium
. . . samarium isotopes
metals
. rare earth elements
. . samarium
. . . samarium isotopes

Samoa
GS landforms
. islands
. . Pacific islands
. . . Samoa

Samos
UF *Satellite and Missile Observation System*
GS artificial satellites
. Samos
military spacecraft
. reconnaissance spacecraft
. . Samos
RT satellite tracking

sampled data systems
(added July 1990)
RT adaptive control
automatic control
control stability
control theory
data sampling
feedback control

samplers
UF *bombs (samplers)*
sampling devices
RT ∞ bombs
core sampling
samples
sampling
selectors
∞ test equipment

samples
DEF Physical or biological specimens intended to be representative of the whole.
GS samples
. Mars surface samples
RT acceptability
Mars sample return missions
samplers
sampling
specimens

sampling
DEF Obtaining of a portion representative of the material concerned.
GS sampling
. air sampling
. core sampling
. data sampling
. particulate sampling
. random sampling
. soil sampling
RT allowances
assaying
Bayes theorem
censored data (mathematics)
chemical analysis
chemical tests
collection
concentration (composition)
confidence limits
counting
estimating
exploration
Global Air Sampling Program
heterogeneity
homogeneity
inspection
investigation
probability theory
process control (industry)
quality control
random errors
reliability
Rosetta mission
samplers
samples
selection
sequential analysis
specimens
standards
statistical analysis
∞ statistics
sweep circuits
∞ tests
variability
Weibull density functions

sampling devices
USE samplers

San Andreas Fault
GS geological faults
. San Andreas Fault
RT California
crustal fractures
Earth crust
earthquakes
Mexico

San Andreas Fault experiment
RT earthquakes
geological faults

San Francisco (CA)
GS cities
. San Francisco (CA)
RT California

San Francisco Bay (CA)
GS bays (topographic features)
. San Francisco Bay (CA)
RT California
Pacific Ocean
San Pablo Bay (CA)

San Joaquin Valley (CA)
GS valleys
. San Joaquin Valley (CA)
RT California
river basins

San Juan Mountains (CO)
GS landforms
. mountains
. . San Juan Mountains (CO)
RT Colorado

San Marco 1 satellite
GS artificial satellites
. meteorological satellites
. . San Marco satellites
. . . San Marco 1 satellite

San Marco 2 satellite
GS artificial satellites
. meteorological satellites
. . San Marco satellites
. . . San Marco 2 satellite

San Marco 3 satellite
GS artificial satellites
. meteorological satellites
. . San Marco satellites
. . . San Marco 3 satellite

San Marco satellites
GS artificial satellites
. meteorological satellites
. . San Marco satellites
. . . San Marco 1 satellite
. . . San Marco 2 satellite
. . . San Marco 3 satellite
RT Scout launch vehicle

San Marino
GS nations
. San Marino
RT Europe
Italy

San Pablo Bay (CA)
GS bays (topographic features)
. San Pablo Bay (CA)
RT California
San Francisco Bay (CA)

sand casting
GS forming techniques
. casting
. . sand casting
RT molding materials
sands

sand dunes
USE dunes

Sand Hills Region (GA-NC-SC)
GS regions
. Sand Hills Region (GA-NC-SC)
RT Georgia
North Carolina
South Carolina

Sand Hills Region (NE)
GS regions
. Sand Hills Region (NE)
RT Nebraska

Sandpiper target missile
GS missile configurations
. **Sandpiper target missile**
missiles
. **Sandpiper target missile**
RT drone vehicles
targets

sands
GS sediments
. **sands**
. . monazite sands
. . tar sands
soils
. **sands**
. . monazite sands
. . tar sands
RT aggregates
alluvium
aquifers
deltas
dunes
dust
Earth resources
fans (landforms)
gravels
grit
ilmenite
littoral drift
littoral transport
molding materials
porous materials
quartz
rain erosion
reefs
sand casting
sandstones
sedimentary rocks
silica glass
silicon dioxide

sandstones
GS rocks
. sedimentary rocks
. . **sandstones**
RT Earth resources
sands
schist
soils

sandwich construction
USE **sandwich structures**

sandwich structures
UF *sandwich construction*
RT composite materials
epoxy matrix composites
honeycomb cores
honeycomb structures
interlayers
laminates
multilayer insulation
ply orientation
rigid structures
∞ structures
walls

Sanger space transportation system
USE **Saenger space transportation system**

sanitation
RT consumables (spacecrew supplies)
health
housekeeping (spacecraft)
hygiene
potable water
public health
sewers
toilets
warming systems
waste disposal
waste management

Santowax (trademark)
RT polystyrene

sapphire
GS aluminum compounds
. aluminum oxides
. . **sapphire**
chalcogenides
. oxides
. . metal oxides
. . . aluminum oxides
. . . . **sapphire**

saprophytes
GS plants (botany)
. **saprophytes**
RT bacteria
microorganisms

sarcina
GS microorganisms
. bacteria
. . **sarcina**

sarcoma
USE **cancer**

sarcoplasmic reticulum
GS organelles
. endoplasmic reticulum
. . **sarcoplasmic reticulum**
RT cells (biology)
cytology
cytoplasm

Sargasso Sea
DEF A region in the Atlantic characterized by mixing ocean currents and a lack of winds. Located northeast of the West Indies.
RT Atlantic Ocean
Gulf Stream
ocean models
ocean surface
oceanography
seas

SarSat
DEF The US satellite of the COSPAS–SarSat project for the search and rescue of distressed vehicles, administered by USSR, US, French, and Canadian agencies. Used for Search and Rescue Satellite.
UF *Search and Rescue Satellite*
GS artificial satellites
. **SarSat**
RT COSPAS
NOAA 8 satellite
reconnaissance
rescue operations
searching

SAS
UF *Small Astronomy Satellites*
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **SAS**
. . . . Explorer 53 satellite
. . . . SAS–1
. . . . SAS–2
. . . . SAS–3
observatories
. astronomical observatories
. . astronomical satellites
. . . **SAS**
. . . . Explorer 53 satellite
. . . . SAS–1
. . . . SAS–2
. . . . SAS–3
RT Explorer 48 satellite
Uhuru satellite

SAS–1
UF *Small Astronomy Satellite 1*
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . SAS
. . . . **SAS–1**
observatories
. astronomical observatories
. . astronomical satellites
. . . SAS
. . . . **SAS–1**
RT radio astronomy

SAS–2
UF *Small Astronomy Satellite 2*
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . SAS
. . . . **SAS–2**
observatories
. astronomical observatories
. . astronomical satellites
. . . SAS
. . . . **SAS–2**
RT Explorer 48 satellite
radio astronomy
spaceborne astronomy

SAS–3
UF *Small Astronomy Satellite 3*
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . SAS
. . . . **SAS–3**
observatories
. astronomical observatories
. . astronomical satellites
. . . SAS
. . . . **SAS–3**
RT Explorer 53 satellite
radio astronomy
spaceborne astronomy
x ray astronomy

SAS–D
USE **IUE**

Saskatchewan
GS nations
. Canada
. . **Saskatchewan**

SATAN (sensor)
USE **terrain analysis**

satellite altimetry
GS altimetry
. **satellite altimetry**
RT altimeters
geodesy
geodetic satellites
geoids
GEOS 3 satellite
Geosat satellites
radar measurement
satellite observation

satellite-borne radar
SEASAT satellites
topography

Satellite and Missile Observation System
USE Samos

satellite antennas
GS antennas
. satellite antennas
RT furlable antennas
multibeam antennas
radio antennas
telecommunication

satellite atmospheres
DEF The atmospheres that are found on natural satellites.
GS environments
. extraterrestrial environments
. . satellite atmospheres
. . . lunar atmosphere
RT ∞ atmospheres
atmospheric chemistry
atmospheric composition
atmospheric physics
Earth atmosphere
Earth ionosphere
Earth magnetosphere
Huygens probe
ionospheric composition
magnetopause
natural satellites
planetary atmospheres
stellar atmospheres
Titan
Triton
upper atmosphere

satellite attitude control
GS attitude control
. satellite attitude control
spacecraft control
. satellite control
. . satellite attitude control
RT attitude stability
automatic control
∞ control
directional control
gravity gradient satellites
jet control
lateral control
longitudinal control
Marquardt R4D engine
three axis stabilization
Transit Attitude Control satellite

satellite attitude disturbance
USE attitude stability
spacecraft stability

satellite breakup
USE spacecraft breakup

satellite capture
USE spacecraft recovery

satellite clusters
USE satellite constellations

satellite communication
DEF Use of communication satellites, passive reflecting belts of dipoles or needles, or reflecting orbiting balloons to extend the range of radio communication by returning signals to Earth from the orbiting object, with or without amplification.
GS telecommunication
. space communication
. . spacecraft communication
. . . satellite communication
RT ACTS
ARPA computer network
astrionics
circumlunar communication
communication satellites
Earth terminals
facsimile communication
ground-air-ground communication
hoop column antennas
interplanetary communication
lunar communication
multibeam antennas
optical communication
packet transmission
plasma antennas
radio communication
satellite communications ships
satellite ground support
single channel per carrier transmission
system generated electromagnetic pulses
transmission rate (communications)
unified S band

satellite communications ships
UF *USNS Kingsport*
GS surface vehicles
. satellite communications ships
water vehicles
. ships
. . satellite communications ships
RT satellite communication
spacecraft communication

satellite configurations
GS spacecraft configurations
. satellite configurations
RT aerodynamic configurations

satellite constellations
(added February 1994)
UF *satellite clusters*
GS networks
. satellite networks
. . satellite constellations
RT communication networks
communication satellites
Global Positioning System
satellite ground tracks
satellite navigation systems
spatial distribution
stationkeeping

satellite control
GS spacecraft control
. satellite control
. . satellite attitude control
RT attitude control
automatic control
∞ control
directional control
flexible spacecraft
gravity gradient satellites
jet control
lateral control
longitudinal control
manual control
remote control
thrust control

satellite defense
USE spacecraft defense

satellite design
GS spacecraft design
. satellite design
RT computer aided design
∞ design
Indian space program
Japanese space program
product development
small satellite technology
spacecraft structures
structural design
systems engineering

satellite doppler positioning
GS positioning
. satellite doppler positioning
RT Argos system
Doppler effect
Doppler navigation
Doppler radar
geodesy
geodetic accuracy
geodetic coordinates
geodetic satellites
geodetic surveys
polystation doppler tracking system
satellite tracking
tracking (position)

satellite drag
GS dynamic characteristics
. drag
. . satellite drag
RT aerodynamic drag
electrostatic drag
friction drag

satellite fragmentation
USE spacecraft breakup

satellite ground support
RT ground support equipment
satellite communication
spacecraft communication

satellite ground tracks
GS ground tracks
. satellite ground tracks
RT flight paths
orbits
satellite constellations

satellite guidance
GS guidance (motion)
. spacecraft guidance
. . satellite guidance
RT automatic control
inertial guidance
injection guidance
LOCATES system
manual control
reentry guidance
rendezvous guidance
space navigation

satellite imagery
GS imagery
. satellite imagery
RT atmospheric correction
Coastal Zone Color Scanner
image analysis
imaging techniques
pixels
satellite observation
satellite-borne photography
vegetative index

satellite instruments
GS spacecraft instruments
. satellite instruments

. . multispectral linear arrays
RT flight instruments
∞ instruments
laser altimeters
measuring instruments
needs (data system)
wildlife radiolocation

satellite interceptors
RT ∞ interceptors
pursuit tracking

satellite launching
USE **spacecraft launching**

satellite lifetime
GS life (durability)
. **satellite lifetime**
RT orbit decay
spacecraft reentry

satellite maneuvers
USE **spacecraft maneuvers**

satellite navigation systems
GS **satellite navigation systems**
. Global Positioning System
. GLONASS
. Transit navigation system
RT autonomous navigation
navigation satellites
radar navigation
radio navigation
satellite constellations
space navigation
∞ systems

satellite networks
SN (NETWORKS INCORPORATING SATELLITES)
GS networks
. **satellite networks**
. . Argos system
. . satellite constellations
. . VSAT (network)
RT aeronautical satellites
Aerosat satellites
code division multiple access
communication networks
communication satellites
ComStar satellites
demand assignment multiple access
domestic satellite communications systems
HET experiment
L-Sat
Marecs maritime satellites
military spacecraft
Molniya satellites
multimission modular spacecraft
navigation satellites
NAVSTAR satellites
network control
Skynet satellites
TDR satellites
teleconferencing
time division multiple access

satellite observation
SN (OBSERVATION OF THE EARTH BY SATELLITE)
GS observation
. Earth observations (from space)
. . **satellite observation**
RT arc clouds
Earth Resources Program
EOS data and information system
EROS (satellites)
ESSA satellites
FIRE (climatology)
IRIS satellites
ISCCP Project
Landsat satellites
meteorological satellites
METEOSAT satellite
Nimbus project
Nimbus satellites
satellite altimetry
satellite imagery
SIRS B satellite
spaceborne photography
swath width
Synchronous Earth Observatory satellite
TIROS operational satellite system
TIROS satellites
TOPEX
Uhuru satellite
vegetative index
Vela satellites
wildlife radiolocation

satellite orbit calculation
USE **orbit calculation**

satellite orbits
SN (LIMITED TO ORBITS OF ARTIFICIAL SATELLITES)
GS orbits
. spacecraft orbits
. . **satellite orbits**
. . . geosynchronous orbits
. . . parking orbits
. . . polar orbits
. . . stationary orbits
. . . twenty-four hour orbits
RT circular orbits
Earth orbits
elliptical orbits
equatorial orbits
Lissajous figures
lunar orbits
orbit insertion
orbit spectrum utilization
orbital mechanics
orbital position estimation
orbital resonances (celestial mechanics)
planetary orbits
retrograde orbits
transfer orbits

satellite orientation
GS attitude (inclination)
. **satellite orientation**
RT flexible spacecraft
image dissector tubes
spin stabilization
three axis stabilization

satellite perturbation
GS perturbation
. orbit perturbation
. . **satellite perturbation**
RT Discos (satellite attitude control)
gravitational fields
orbital mechanics
Schach effect
spacecraft stability
tesseral harmonics

satellite power transmission
(added November 1989)
GS power beaming
. **satellite power transmission**
RT laser power beaming
microwave power beaming
rectennas
solar arrays
solar cells
solar power satellites

satellite rendezvous
USE **orbital rendezvous**

satellite repair
USE **orbital servicing**

satellite rotation
GS gyration
. rotation
. . **satellite rotation**
RT flexible spacecraft
spin reduction
spin stabilization
tumbling motion
yo-yo devices

satellite solar energy conversion
GS energy conversion
. **satellite solar energy conversion**
RT ∞ conversion
microwave transmission
microwaves
power conditioning
solar cells
sun

satellite solar power stations
RT energy conversion
microwave transmission
microwaves
power conditioning
solar cells
sun

satellite sounding
GS sounding
. **satellite sounding**
RT Advanced Microwave Sounding Unit
artificial satellites
atmospheric sounding
ionosondes
ionospheric sounding
meteorological satellites
radiosondes
rocket sounding
visible infrared spin scan radiometer

satellite surfaces
SN (RESTRICTED TO NATURAL SATELLITES)
DEF The crust and soil of natural satellites.
GS **satellite surfaces**
. lunar surface
RT craters
icy satellites
Mercury surface
natural satellites
∞ surfaces
terrain analysis

satellite television
GS communication equipment
. spacecraft television
. . **satellite television**
telecommunication
. spacecraft television
. . **satellite television**
television systems
. spacecraft television
. . **satellite television**
RT color television
direct broadcast satellites
meteorological satellites
space probes
stereotelevision

Symphonie satellites
television cameras
television transmission

satellite temperature
GS spacecraft temperature
. satellite temperature
temperature
. satellite temperature
RT ambient temperature
radiative heat transfer
solar radiation shielding
spacecraft design
spacecraft environments
temperature distribution
temperature measurement
thermal environments

satellite tracking
GS tracking (position)
. spacecraft tracking
. . satellite tracking
. . . satellite-to-satellite tracking
RT cinetheodolites
Global Tracking Network
International Satellite Geodesy Experiment
laser target designators
minitrack system
optical satellite tracking program
photographic tracking
range and range rate tracking
Samos
satellite doppler positioning
Space Flight Tracking and Data Network
STDN (network)
tracking networks
tracking stations
transponder control group

Satellite Tracking and Data Acq Network
USE STDN (network)

satellite transmission
GS transmission
. signal transmission
. . satellite transmission
RT Aloha system
binary phase shift keying
code division multiplexing
data transmission
direct broadcast satellites
domestic satellite communications systems
downlinking
Earth terminals
frequency division multiplexing
frequency reuse
MSAT
multiplexing
pulse communication
quadrature phase shift keying
radio transmission
single channel per carrier transmission
spacecraft television
TDR satellites
television transmission
uplinking

satellite-borne instruments
GS measuring instruments
. satellite-borne instruments
. . Advanced Microwave Sounding Unit
. . Advanced Very High Resolution Radiometer
. . AMPS (satellite payload)
. . Total Ozone Mapping Spectrometer
RT AMPTE (satellites)
DIAL satellite
infrared radiometers
instrument packages
∞ instruments
OPEN Project
particle telescopes
radiation detectors
remote sensors
single event upsets
Solar Backscatter UV Spectrometer
visible infrared spin scan radiometer

satellite-borne photography
GS imagery
. photography
. . spaceborne photography
. . . satellite-borne photography
RT aerial photography
astronomical photography
black and white photography
DMSP satellites
forest fire detection
geographic applications program
infrared photography
Mars photographs
photomapping
photomaps
rocket-borne photography
satellite imagery
space surveillance (spaceborne)
spectral reconnaissance
timber inventory

satellite-borne radar
GS radar
. satellite-borne radar
RT radar detection
satellite altimetry
search radar
surveillance radar
synthetic aperture radar
tracking radar

satellite-to-satellite tracking
GS tracking (position)
. spacecraft tracking
. . satellite tracking
. . . satellite-to-satellite tracking
RT space surveillance (spaceborne)
tracking networks

∞ **satellites**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Any objects, man-made or natural, that orbit celestial bodies.
RT artificial satellites
natural satellites
∞ spacecraft

saturable reactors
UF *SR (reactors)*
GS electric reactors
. saturable reactors
RT magnet coils
magnetic amplifiers
magnetic circuits
magnetic cores
magnetic switching
power reactors
transformers

saturated hydrocarbons
USE alkanes

∞ **saturation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT concentration (composition)
condensing
crowding
desaturation
penetration
permeating
precipitation (chemistry)
precipitation (meteorology)
unsaturation (chemistry)
wetting

saturation (chemistry)
DEF The state of a solution when it holds the maximum equilibrium quantity of dissolved matter at a given temperature.
RT chemical bonds
∞ chemistry
dew point
precipitation (chemistry)
unsaturation (chemistry)

∞ **Saturn**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Saturn (planet)
Saturn project

Saturn (planet)
GS celestial bodies
. planets
. . gas giant planets
. . . Saturn (planet)
RT Calypso
Cassini mission
Dione
Enceladus
Epimetheus
Helene
Hyperion
Iapetus
Janus
Mimas
Pandora
Phoebe
Prometheus
Rhea (astronomy)
∞ Saturn
Telesto
Tethys
Titan
Voyager 2 spacecraft

Saturn 1 launch vehicles
GS launch vehicles
. Saturn launch vehicles
. . Saturn 1 launch vehicles
. . . Saturn 1 SA-1 launch vehicle
. . . Saturn 1 SA-10 launch vehicle
. . . Saturn 1 SA-2 launch vehicle
. . . Saturn 1 SA-3 launch vehicle
. . . Saturn 1 SA-4 launch vehicle
. . . Saturn 1 SA-5 launch vehicle
. . . Saturn 1 SA-6 launch vehicle
. . . Saturn 1 SA-7 launch vehicle
. . . Saturn 1 SA-8 launch vehicle
. . . Saturn 1 SA-9 launch vehicle
rocket vehicles
. multistage rocket vehicles
. . Saturn launch vehicles
. . . Saturn 1 launch vehicles
. . . . Saturn 1 SA-1 launch vehicle
. . . . Saturn 1 SA-10 launch vehicle
. . . . Saturn 1 SA-2 launch vehicle

. . . . Saturn 1 SA-3 launch vehicle
. . . . Saturn 1 SA-4 launch vehicle
. . . . Saturn 1 SA-5 launch vehicle
. . . . Saturn 1 SA-6 launch vehicle
. . . . Saturn 1 SA-7 launch vehicle
. . . . Saturn 1 SA-8 launch vehicle
. . . . Saturn 1 SA-9 launch vehicle
RT H-1 engine
M-1 engine

Saturn 1 SA-1 launch vehicle
GS launch vehicles
. Saturn launch vehicles
. . Saturn 1 launch vehicles
. . . **Saturn 1 SA-1 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Saturn launch vehicles
. . . Saturn 1 launch vehicles
. . . . **Saturn 1 SA-1 launch vehicle**

Saturn 1 SA-2 launch vehicle
GS launch vehicles
. Saturn launch vehicles
. . Saturn 1 launch vehicles
. . . **Saturn 1 SA-2 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Saturn launch vehicles
. . . Saturn 1 launch vehicles
. . . . **Saturn 1 SA-2 launch vehicle**

Saturn 1 SA-3 launch vehicle
GS launch vehicles
. Saturn launch vehicles
. . Saturn 1 launch vehicles
. . . **Saturn 1 SA-3 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Saturn launch vehicles
. . . Saturn 1 launch vehicles
. . . . **Saturn 1 SA-3 launch vehicle**

Saturn 1 SA-4 launch vehicle
GS launch vehicles
. Saturn launch vehicles
. . Saturn 1 launch vehicles
. . . **Saturn 1 SA-4 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Saturn launch vehicles
. . . Saturn 1 launch vehicles
. . . . **Saturn 1 SA-4 launch vehicle**

Saturn 1 SA-5 launch vehicle
GS launch vehicles
. Saturn launch vehicles
. . Saturn 1 launch vehicles
. . . **Saturn 1 SA-5 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Saturn launch vehicles
. . . Saturn 1 launch vehicles
. . . . **Saturn 1 SA-5 launch vehicle**

Saturn 1 SA-6 launch vehicle
GS launch vehicles
. Saturn launch vehicles
. . Saturn 1 launch vehicles
. . . **Saturn 1 SA-6 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Saturn launch vehicles
. . . Saturn 1 launch vehicles
. . . . **Saturn 1 SA-6 launch vehicle**

Saturn 1 SA-7 launch vehicle
GS launch vehicles
. Saturn launch vehicles
. . Saturn 1 launch vehicles
. . . **Saturn 1 SA-7 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Saturn launch vehicles
. . . Saturn 1 launch vehicles
. . . . **Saturn 1 SA-7 launch vehicle**

Saturn 1 SA-8 launch vehicle
GS launch vehicles
. Saturn launch vehicles
. . Saturn 1 launch vehicles
. . . **Saturn 1 SA-8 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Saturn launch vehicles
. . . Saturn 1 launch vehicles
. . . . **Saturn 1 SA-8 launch vehicle**

Saturn 1 SA-9 launch vehicle
GS launch vehicles
. Saturn launch vehicles
. . Saturn 1 launch vehicles
. . . **Saturn 1 SA-9 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Saturn launch vehicles
. . . Saturn 1 launch vehicles
. . . . **Saturn 1 SA-9 launch vehicle**

Saturn 1 SA-10 launch vehicle
GS launch vehicles
. Saturn launch vehicles
. . Saturn 1 launch vehicles
. . . **Saturn 1 SA-10 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Saturn launch vehicles
. . . Saturn 1 launch vehicles
. . . . **Saturn 1 SA-10 launch vehicle**

Saturn 1 workshop
GS artificial satellites
. orbital workshops
. . Saturn workshops
. . . **Saturn 1 workshop**
manned spacecraft
. orbital workshops
. . Saturn workshops
. . . **Saturn 1 workshop**
RT airlock modules
Apollo applications program
Apollo project
multiple docking adapters
Skylab program
space stations

Saturn 1B launch vehicles
GS launch vehicles
. Saturn launch vehicles
. . **Saturn 1B launch vehicles**
rocket vehicles
. multistage rocket vehicles
. . Saturn launch vehicles
. . . **Saturn 1B launch vehicles**
RT H-1 engine
J-2 engine
M-1 engine
Skylab 2
Skylab 3
Skylab 4

Saturn 2 launch vehicles
GS launch vehicles
. Saturn launch vehicles
. . **Saturn 2 launch vehicles**
rocket vehicles
. multistage rocket vehicles
. . Saturn launch vehicles
. . . **Saturn 2 launch vehicles**

Saturn 5 launch vehicles
GS launch vehicles
. Saturn launch vehicles
. . **Saturn 5 launch vehicles**
rocket vehicles
. multistage rocket vehicles
. . Saturn launch vehicles
. . . **Saturn 5 launch vehicles**
RT J-2 engine
Skylab 2
Skylab 3
Skylab 4

Saturn 5 workshop
GS artificial satellites
. orbital workshops
. . Saturn workshops
. . . **Saturn 5 workshop**
manned spacecraft
. orbital workshops
. . Saturn workshops
. . . **Saturn 5 workshop**
RT airlock modules
Apollo applications program
Apollo project
multiple docking adapters
Skylab program
space stations

Saturn atmosphere
DEF The outer shell of gas surrounding the planet Saturn.
GS environments
. extraterrestrial environments
. . planetary environments
. . . planetary atmospheres
. . . . **Saturn atmosphere**
RT atmospheric composition
planetary ionospheres
planetary radiation

Saturn D launch vehicle
GS launch vehicles
. Saturn launch vehicles
. . **Saturn D launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Saturn launch vehicles
. . . **Saturn D launch vehicle**
RT RL-10-A-3 engine

Saturn launch vehicles
GS launch vehicles
. **Saturn launch vehicles**
. . Saturn 1 launch vehicles
. . . Saturn 1 SA-1 launch vehicle
. . . Saturn 1 SA-10 launch vehicle
. . . Saturn 1 SA-2 launch vehicle
. . . Saturn 1 SA-3 launch vehicle
. . . Saturn 1 SA-4 launch vehicle
. . . Saturn 1 SA-5 launch vehicle
. . . Saturn 1 SA-6 launch vehicle
. . . Saturn 1 SA-7 launch vehicle
. . . Saturn 1 SA-8 launch vehicle
. . . Saturn 1 SA-9 launch vehicle
. . Saturn 1B launch vehicles
. . Saturn 2 launch vehicles
. . Saturn 5 launch vehicles
. . Saturn D launch vehicle
rocket vehicles
. multistage rocket vehicles
. . **Saturn launch vehicles**
. . . Saturn 1 launch vehicles
. . . . Saturn 1 SA-1 launch vehicle

. . . . Saturn 1 SA–10 launch vehicle
. . . . Saturn 1 SA–2 launch vehicle
. . . . Saturn 1 SA–3 launch vehicle
. . . . Saturn 1 SA–4 launch vehicle
. . . . Saturn 1 SA–5 launch vehicle
. . . . Saturn 1 SA–6 launch vehicle
. . . . Saturn 1 SA–7 launch vehicle
. . . . Saturn 1 SA–8 launch vehicle
. . . . Saturn 1 SA–9 launch vehicle
. . . Saturn 1B launch vehicles
. . . Saturn 2 launch vehicles
. . . Saturn 5 launch vehicles
. . . Saturn D launch vehicle
RT Apollo project
F–1 rocket engine
RL–10 engines
∞ vehicles

Saturn project
GS programs
. NASA programs
. . NASA space programs
. . . **Saturn project**
. projects
. . **Saturn project**
. space programs
. . NASA space programs
. . . **Saturn project**
RT Apollo applications program
Apollo spacecraft
Centaur launch vehicle
launch vehicles
lunar launch
Pegasus satellites
RIFT (reactor in flight test)
∞ Saturn
Voyager project

Saturn rings
GS celestial bodies
. planetary rings
. . **Saturn rings**
RT gas giant planets
Jupiter rings
moonlets
natural satellites
planetary atmospheres
planetary composition
planetary surfaces
planetary temperature
planetology
planets
∞ rings
solar system
Uranus rings

Saturn S–1 stage
GS rocket vehicles
. Saturn stages
. . **Saturn S–1 stage**
RT liquid propellant rocket engines

Saturn S–1B stage
GS rocket vehicles
. Saturn stages
. . **Saturn S–1B stage**
RT liquid propellant rocket engines

Saturn S–1C stage
GS rocket vehicles
. Saturn stages
. . **Saturn S–1C stage**
RT liquid propellant rocket engines

Saturn S–2 stage
GS rocket vehicles
. Saturn stages
. . **Saturn S–2 stage**
RT liquid propellant rocket engines

Saturn S–4 stage
GS rocket vehicles
. Saturn stages
. . **Saturn S–4 stage**
RT liquid propellant rocket engines

Saturn S–4B stage
GS rocket vehicles
. Saturn stages
. . **Saturn S–4B stage**
RT liquid propellant rocket engines

Saturn satellites
DEF The natural satellites of the planet Saturn.
GS celestial bodies
. natural satellites
. . **Saturn satellites**
. . . Calypso
. . . Dione
. . . Enceladus
. . . Epimetheus
. . . Helene
. . . Hyperion
. . . Iapetus
. . . Janus
. . . Mimas
. . . Pandora
. . . Phoebe
. . . Prometheus
. . . Rhea (astronomy)
. . . Telesto
. . . Tethys
. . . Titan
RT icy satellites

Saturn stages
GS rocket vehicles
. **Saturn stages**
. . Saturn S–1 stage
. . Saturn S–1B stage
. . Saturn S–1C stage
. . Saturn S–2 stage
. . Saturn S–4 stage
. . Saturn S–4B stage
RT liquid propellant rocket engines

Saturn workshops
GS artificial satellites
. orbital workshops
. . **Saturn workshops**
. . . Saturn 1 workshop
. . . Saturn 5 workshop
manned spacecraft
. orbital workshops
. . **Saturn workshops**
. . . Saturn 1 workshop
. . . Saturn 5 workshop
RT airlock modules
Apollo applications program
Apollo project
multiple docking adapters
Skylab program
space stations

Saudi Arabia
GS nations
. **Saudi Arabia**
RT Asia
Saudi Arabian space program

Saudi Arabian space program
GS programs
. space programs
. . **Saudi Arabian space program**
RT Arabsat
Arcomsat
Saudi Arabia
Space Shuttle mission 51–G

Savage aircraft
USE **A–2 aircraft**

Savannah nuclear ship
GS surface vehicles
. cargo ships
. . **Savannah nuclear ship**
. nuclear powered ships
. . **Savannah nuclear ship**
water vehicles
. ships
. . cargo ships
. . . **Savannah nuclear ship**
. . nuclear powered ships
. . . **Savannah nuclear ship**
RT marine propulsion
nuclear propulsion

savannahs
USE **grasslands**

saws
GS cutters
. **saws**
tools
. **saws**
RT machine tools
shears

sawtooth waveforms
GS waveforms
. **sawtooth waveforms**
RT pulse amplitude
pulse duration
square waves

SC–1 aircraft
UF *Short SC–1 aircraft*
GS jet aircraft
. **SC–1 aircraft**
monoplanes
. **SC–1 aircraft**
research vehicles
. research aircraft
. . **SC–1 aircraft**
tailless aircraft
. **SC–1 aircraft**
V/STOL aircraft
. vertical takeoff aircraft
. . **SC–1 aircraft**
RT ∞ aircraft

SC–5 aircraft
UF *Belfast aircraft*
Short Belfast C MK–1 aircraft
Short SC–5 aircraft
GS jet aircraft
. turboprop aircraft
. . **SC–5 aircraft**
monoplanes
. **SC–5 aircraft**
transport aircraft
. **SC–5 aircraft**
RT ∞ aircraft

SC–7 aircraft
UF *Short SC–7 aircraft*
Skyvan aircraft
Turbo–Skyvan aircraft
GS light aircraft
. **SC–7 aircraft**
monoplanes
. **SC–7 aircraft**

transport aircraft
. SC-7 aircraft
RT ∞ aircraft
cargo aircraft
passenger aircraft

scalar magnetic charge
USE **magnetic charge density**

scalars
DEF Any physical quantity whose field can be described by a single numerical value at each point in space.
RT tensor analysis
tensors

∞ **scale**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT scale (corrosion)
scale (ratio)
temperature scales
weight indicators

scale (corrosion)
GS corrosion
. scale (corrosion)
RT chemical attack
degradation
descaling
hot corrosion
pickling (metallurgy)
rusting
∞ scale
∞ scaling

scale (ratio)
GS ratios
. scale (ratio)
RT mapping
reticles
∞ scale

scale effect
DEF Any variation in the nature of the flow and in the force coefficients associated with a change in value of the Reynolds number, i.e., caused by change in size without change in shape.
RT ∞ effects
force distribution
parameterization
Reynolds number
∞ scaling

scale height
DEF A measure of the relationship between density and temperature at any point in the atmosphere.
GS dimensions
. height
. . scale height
RT Earth atmosphere
geopotential height
head (fluid mechanics)

scale models
DEF Three-dimensional representations of objects or structures containing all parts in the same proportion as their true size.
GS models
. scale models
RT aerodynamic configurations
aircraft models
Reynolds equation
scaling laws
semispan models
similarity theorem
similitude law
spacecraft models
wind tunnel models

scalers
DEF Devices that produce output pulses whenever a prescribed number of input pulses have been received.
GS circuits
. counting circuits
. . scalers
RT tensor analysis

∞ **scaling**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT calibrating
errors
scale (corrosion)
scale effect
scaling laws

scaling laws
GS laws
. scaling laws
RT dimensional analysis
dimensionless numbers
scale models
∞ scaling
similarity numbers
wind tunnel calibration

scalloping
RT edges
electron beams
traveling wave tubes

Scandinavia
RT Denmark
Finland
Norway
Sweden

scandium
GS chemical elements
. rare earth elements
. . scandium
. . . scandium isotopes
metals
. rare earth elements
. . scandium
. . . scandium isotopes
. transition metals
. . scandium
. . . scandium isotopes

scandium 46
USE **scandium isotopes**

scandium compounds
GS rare earth compounds
. scandium compounds
. . scandium oxides
RT ∞ chemical compounds
Group 3B compounds
∞ metal compounds

scandium isotopes
UF *scandium 46*
GS chemical elements
. nuclides
. . isotopes
. . . scandium isotopes
. rare earth elements
. . scandium
. . . scandium isotopes
metals
. rare earth elements
. . scandium
. . . scandium isotopes
. transition metals
. . scandium
. . . scandium isotopes

scandium oxides
GS chalcogenides
. oxides
. . metal oxides
. . . scandium oxides
rare earth compounds
. scandium compounds
. . scandium oxides

Scanner project
GS programs
. projects
. . Scanner project
RT horizon scanners
infrared scanners
optical equipment

scanners
DEF Radar mechanisms incorporating such things as rotatable antennas, radiators, motor drives, or mountings for directing a searching radar beam through space and imparting target information to an indicator. Used for scanning devices.
UF *scanning devices*
GS scanners
. horizon scanners
. infrared scanners
. ocean color scanner
. . Coastal Zone Color Scanner
. optical scanners
. . flying spot scanners
. . multispectral band scanners
. . . thematic mappers (LANDSAT)
. ultrasonic scanners
RT conical scanning
optical data processing
optical equipment
panoramic scanning
reading
scanning
subreflectors

scanning
DEF In radar, the motion of the antenna assembly when searching for targets.
GS scanning
. conical scanning
. frequency scanning
. panoramic scanning
. radar scanning
. raster scanning
RT Earth resources
EROS (satellites)
examination
monitors
multispectral band scanners
rapid ballistics identification
reading
scanners
searching
surveillance
ultrasonic scanners

scanning devices
USE **scanners**

scanning electron microscopy
(added September 1992)
DEF A type of electron microscopy in which a beam of electrons, a few hundred angstroms in diameter, systematically sweeps over the specimen. The intensity of secondary electrons

generated at the point of impact of the beam on the specimen is measured and the resulting signal is fed into a cathode-ray-tube display which is scanned in synchronism with the scanning of the specimen.
UF *SEM (microscopy)*
GS microscopy
. electron microscopy
. . **scanning electron microscopy**
RT electron beams
electron microscopes
field emission
ion microscopes
magnetic lenses
microanalysis
phase contrast
secondary emission

scanning laser acoustic microscope (SLAM)
USE **acoustic microscopes**

scanning tunneling microscopy
(added October 1986)
GS microscopy
. electron microscopy
. . **scanning tunneling microscopy**
RT electron microscopes
electron tunneling
transmission electron microscopy

scapula
GS anatomy
. musculoskeletal system
. . bones
. . . **scapula**
RT arm (anatomy)
shoulders

SCAR program
USE **supersonic cruise aircraft research**

scarfing
GS cutting
. **scarfing**
RT cleaning
grinding (material removal)
metal cutting
slicing

scarps
USE **escarpments**

scars
GS tissues (biology)
. **scars**

scars (geology)
USE **erosion**

SCAT
USE **supersonic commercial air transport**

SCATHA satellite
DEF Satellite for investigating spacecraft charging at high altitudes. A joint NASA–Air Force venture. Used for P78–2 satellite.
UF *P78–2 satellite*
Spacecraft Charging at High Altitude
GS artificial satellites
. scientific satellites
. . **SCATHA satellite**
RT ∞ charging
electric charge
electromagnetic interference
electrostatic charge
electrostatic probes
electrostatic shielding
high energy electrons

scatter plates (optics)
DEF Holograms of diffusing screens for scattering incident light by the process of diffraction.
GS optical equipment
. **scatter plates (optics)**
RT beam splitters
coherent light
holographic interferometry
holography
interferometry
light scattering
∞ optics
∞ plates
speckle holography
speckle interferometry

scatter propagation
DEF Specifically, the long-range propagation of radio signals by scattering due to index of refraction inhomogeneities in the lower atmosphere.
GS transmission
. electromagnetic wave transmission
. . **scatter propagation**
. . . ionospheric F-scatter propagation
. wave propagation
. . **scatter propagation**
. . . ionospheric F-scatter propagation
RT backscattering
forward scattering
ionospheric propagation
meteor trails
radio reception
radio scattering
radio transmission
radio waves

scatterers
USE **scattering**

scattering
DEF The process by which small particles suspended in a medium of a different index of diffraction diffuse a portion of the incident radiation in all directions. In scattering, no energy transformation results, only a change in the spatial distribution of the radiation. Used for scatterers.
UF *scatterers*
GS **scattering**
. backscattering
. coherent scattering
. Compton effect
. elastic scattering
. electron scattering
. . electron runaway (plasma physics)
. forward scattering
. incoherent scattering
. inelastic scattering
. inverse scattering
. ion scattering
. nuclear scattering
. . neutron scattering
. . resonance scattering
. nucleon-nucleon scattering
. proton scattering
. radar scattering
. radio scattering
. . microwave scattering
. wave scattering
. . acoustic scattering
. . . reverberation
. . atmospheric scattering
. . . tropospheric scattering
. . electromagnetic scattering
. . . ionospheric F-scatter propagation
. . . light scattering
. . . . halos
. . . microwave scattering
. . . Mie scattering
. . . . Rayleigh scattering
. . . Raman spectra
. . . Thomson scattering
. . . x ray scattering
RT atomic collisions
bistatic reflectivity
circumsolar radiation
collision parameters
collisions
deep scattering layers
deflection
diffusion
dispersing
electromagnetic radiation
encounters
Huygens principle
impingement
incident radiation
inelastic collisions
mean free path
particle collisions
pomerons
reflection
releasing
scatterometers
shock wave interaction
spread reflection
spreading
sprinkling
statistical distributions
transmittance
wave degradation
wave dispersion
wave interaction

scattering amplitude
GS amplitudes
. **scattering amplitude**
RT Faddeev equations
Mandelstam representation
wave scattering

scattering coefficients
DEF Measures of the attenuation due to scattering of radiation as it traverses a medium containing scattering particles.
GS coefficients
. **scattering coefficients**
RT absorptivity
attenuation coefficients
form factors

scattering cross sections
DEF The hypothetical areas normal to the incident radiation that would geometrically intercept the total amount of radiation actually scattered by a scattering particle. They are also defined, equivalently, as the cross section areas of isotropic scatterers (spheres) which would scatter the same amount of radiation as the actual amount.
RT absorption cross sections
baryon resonance
Born approximation
∞ cross sections
electron runaway (plasma physics)
ionization cross sections
neutron cross sections
Pomeranchuk theorem
pomerons
Ramsauer effect
Regge poles
S matrix theory
stopping power

scattering functions
DEF The intensities of scattered radiation in a given direction per lumen of flux incident upon the scattering material.
RT flux density
∞ functions
radiant flux density

scattering matrix
USE **S matrix theory**

scatterometers
GS measuring instruments
. **scatterometers**
RT ∞ instruments
microwave scattering
microwaves
radar
radar scattering
scattering
wave scattering

scavenging
RT cleaning
degassing
deoxidizing
purification

SCCF
USE **Solar Cell Calibration Facility**

scene analysis
GS data processing
. **scene analysis**
RT change detection
character recognition
edge detection
Feature Identification and Location Exper
image analysis
imagery
imaging techniques
optical flow (image analysis)
video landmark acquisition and tracking

scenedesmus
GS plants (botany)
. **algae**
. . **scenedesmus**

SCF
USE **self consistent fields**

Schach effect
DEF When a slowly or nonrotating satellite is heated on its sunward side, the photons of thermal radiation carry away more momentum from the hot sunward side than the cold shadowed side, thereby giving the satellite a certain net acceleration in the direction away from the sun. This effect was discovered by Milton Schach in the course of an investigation of unknown perturbations in the LAGEOS satellite.
RT celestial mechanics
∞ effects
orbit perturbation
perturbation
satellite perturbation

Schauder fixpoint theorem
GS theorems
. **Schauder fixpoint theorem**
RT complex variables
differential equations

schedules
GS **schedules**
. countdown
RT contract management
precision
predictions
production planning
time
; time lag
turnaround (STS)

scheduling
GS **scheduling**
. prediction analysis techniques
RT calendars
consecutive events
continuity
∞ control
crop calendars
decision theory
forecasting
formalism
lateness
mathematical models
matrix management
mission planning
optimization
production engineering
quality control
sequencing
task complexity
task planning (robotics)
tasks
time series analysis

scheelite
GS calcium compounds
. **scheelite**
chalcogenides
. oxides
. . metal oxides
. . . tungsten oxides
. . . . **scheelite**
minerals
. **scheelite**
tungsten compounds
. tungsten oxides
. . **scheelite**

Scheikunoff principle
RT antenna radiation patterns
horn antennas
Huygens principle
reflectometers
reflectors

schematics
USE **circuit diagrams**

Schiff bases
USE **imines**

schist
DEF A strongly foliated crystalline rock formed by dynamic metamorphism which can be readily split into thin flakes or slabs due to the well developed parallelism of more then 50% of the minerals present.
GS rocks
. **schist**
RT limestone
sandstones

schizophrenia
GS psychoses
. **schizophrenia**
RT ∞ depression
irrationality
mental health

Schleicher aircraft
RT ∞ aircraft
gliders

Schlieren photography
DEF A method of photography for flow patterns that takes advantage of the fact that light passing through a density gradient in a gas is refracted as though it were passing through a prism.
GS imagery
. photography
. . shadowgraph photography
. . . **Schlieren photography**
RT black and white photography
differential interferometry
flow visualization
Mach–Zehnder interferometers
Moire effects

Schmidt cameras
GS optical equipment
. cameras
. . **Schmidt cameras**
photographic equipment
. cameras
. . **Schmidt cameras**
RT astronomical photography
Baker–Nunn camera
telescopes

Schmidt method
RT differential equations
integral equations
∞ methodology
real variables

Schmidt number
GS dimensionless numbers
. **Schmidt number**
ratios
. **Schmidt number**
RT Nusselt number
Prandtl number

Schmidt telescopes
GS telescopes
. **Schmidt telescopes**
RT reflecting telescopes

schools
RT education
instructors
training evaluation
universities

schools (fish)
GS animals
. vertebrates
. . fishes
. . . **schools (fish)**
RT fishing
ichthyology

Schottky barrier diodes
USE **Schottky diodes**

Schottky diodes
UF *Schottky barrier diodes*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **Schottky diodes**
. solid state devices
. . semiconductor devices
. . . **Schottky diodes**
RT ∞ barriers
Barritt diodes
gallium arsenides
MSM (semiconductors)
n-type semiconductors
semiconductor junctions
silicon

SIS (semiconductors)
work functions
zinc selenides

Schottky effect
USE **work functions**

schreibersite
GS iron compounds
. **schreibersite**
minerals
. **schreibersite**
nickel compounds
. **schreibersite**
phosphorus compounds
. phosphides
. . **schreibersite**
RT iron meteorites
meteoritic composition
stony meteorites

Schroedinger equation
GS wave equations
. **Schroedinger equation**
RT ∞ equations
Wentzel–Kramer–Brillouin method

Schuler tuning
DEF Adjusting a system performing the function of a pendulum so that it has a period of 84 minutes.
GS tuning
. **Schuler tuning**
RT gyroscopic pendulums
gyroscopic stability
inertial navigation

Schumann–Runge bands
GS spectra
. spectral bands
. . **Schumann–Runge bands**
RT absorption spectra
∞ bands
emission spectra
Herzberg bands
oxygen
quantum theory

Schwartz inequality
GS inequalities
. **Schwartz inequality**
RT algebra
linear transformations
vectors (mathematics)

Schwartz method
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Schwartz method**
stress analysis
. **Schwartz method**
RT ∞ methodology

Schwarz–Christoffel transformation
GS analysis (mathematics)
. complex variables
. . **Schwarz–Christoffel transformation**
functions (mathematics)
. **Schwarz–Christoffel transformation**
RT conformal mapping

Schwarzschild antennas
GS antennas
. **Schwarzschild antennas**
RT horns
parabolic reflectors
radar antennas
radio antennas

Schwarzschild metric
RT bimetric theories
coordinate transformations
escape velocity
event horizon
gravitational fields
ionization
light speed
orbitals
orbits
relativity

Schwassmann–Wachmann comet
GS celestial bodies
. comets
. . **Schwassmann–Wachmann comet**
RT solar system

sciatic region
GS anatomy
. **sciatic region**
regions
. **sciatic region**
RT human body
lumbar region
musculoskeletal system
nerves
spine

∞ **science**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT acoustics
aeroacoustics
aerodynamics
∞ aeronautics
aerospace medicine
aerothermodynamics
algebra
anthropology
astrodynamics
astronomy
astrophysics
atmospheric physics
atomic physics
bioacoustics
bioastronautics
biodynamics
∞ biology
biophysics
botany
cloud physics
combustion physics
computational astrophysics
electrophysics
electrophysiology
entomology
fluid dynamics
fluid mechanics
geology
geometry
geophysics
health physics
helioseismology
hydrogeology
hydromechanics
life sciences
low temperature physics
marine biology
marine chemistry
marine meteorology
∞ materials science
∞ mathematics
∞ mechanics (physics)
medical science
∞ metallurgy
meteorology
∞ molecular physics
neurophysiology
neutron physics
nuclear physics
oceanography
∞ optics
∞ physical sciences
∞ physics
physiochemistry
physiology
plasma physics
polymer physics
psychophysics
psychophysiology
radio astronomy
radio physics
reactor physics
reentry physics
respiratory physiology
seismology
solar diameter
solar physics
solid mechanics
∞ solid state physics
stellar physics
sunrise
sunset
taxonomy
theoretical physics
trigonometry
underwater physiology
∞ zoology

scientific instrument modules
USE **SIM**

scientific satellites
GS artificial satellites
. **scientific satellites**
. . AMPTE (satellites)
. . astronomical satellites
. . . Astronomical Netherlands Satellite
. . . Gamma Ray Observatory
. . . Ginga satellite
. . . HEAO
. . . . HEAO 1
. . . . HEAO 2
. . . . HEAO 3
. . . . HEAO 4
. . . Hubble Space Telescope
. . . Infrared Astronomy Satellite
. . . Infrared Space Observatory (ISO)
. . . IUE
. . . Large Deployable Reflector
. . . Magellan ultraviolet astronomy satellite
. . . OAO
. . . . OAO 1
. . . . OAO 2
. . . . OAO 3
. . . OSO
. . . . AOSO
. . . . OSO–1
. . . . OSO–2
. . . . OSO–3
. . . . OSO–4
. . . . OSO–5
. . . . OSO–6
. . . . OSO–7
. . . . OSO–8
. . . . OSO–C
. . . Quasat
. . . SAS
. . . . Explorer 53 satellite

. . . . SAS–1
. . . . SAS–2
. . . . SAS–3
. . . Space Infrared Telescope Facility
. . . Spartan satellites
. . . Tenma satellite
. . . X Ray Astrophysics Facility
. . ATS
. . . ATS 1
. . . ATS 2
. . . ATS 3
. . . ATS 4
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. . . ATS 6
. . . ATS 7
. . . ATS 8
. . Azur satellite
. . Cannonball 2 satellite
. . CRRES (satellite)
. . DIAL satellite
. . Environmental Research Satellites
. . . ERS 17
. . . ERS 18
. . . Intasat satellite
. . EXOS satellites
. . . EXOS–A satellite
. . . EXOS–B satellite
. . . EXOS–C satellite
. . . EXOS–D satellite
. . Exosat satellite
. . Explorer satellites
. . . Applications Explorer Satellites
. . . Cosmic Background Explorer satellite
. . . Dual Air Density Explorer
. . . Dynamics Explorer satellites
. . . . Dynamics Explorer 1 satellite
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. . . Explorer 1 satellite
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. . . Explorer 53 satellite
. . . Explorer 54 satellite
. . . Explorer 55 satellite
. . . Extreme Ultraviolet Explorer satellite
. . . Far UV Spectroscopic Explorer
. . . IMP
. . . International Magnetospheric Explorer
. . . International Sun Earth Explorers
. . . . International Sun Earth Explorer 1
. . . . International Sun Earth Explorer 2
. . . . International Sun Earth Explorer 3
. . . Micrometeoroid Explorer satellites
. . . Radio Astronomy Explorer satellite
. . . Solar Mesosphere Explorer
. . . Uhuru satellite
. . . X Ray Timing Explorer
. . Geopotential Research Mission
. . Hawkeye satellites
. . Long Duration Exposure Facility
. . LZEEBE satellite
. . MagSat satellites
. . . MagSat 1 satellite
. . . Magsat A satellite
. . . MagSat B satellite
. . ORBIS
. . . ORBIS CAL satellite
. . OV–1 satellites
. . OV–2 satellites
. . OV–3 satellites
. . OV–4 satellites
. . OV–5 satellites
. . SCATHA satellite
. . small scientific satellites
. . UK satellites
. . . Ariel 4 satellite
. . . Ariel 5 satellite
. . . Miranda satellite
. . . UK 4 satellite
. . Upper Atmosphere Research Satellite (UARS)
RT Canadian space program
Cluster Mission
EOS data and information system
ESRO 4 satellite
SOHO Mission
technology feasibility spacecraft

scientific visualization
(added July 1993)
UF *data visualization*
GS **scientific visualization**
. numerical flow visualization
RT computer graphics
computerized simulation
display devices
image processing
Mission to Planet Earth
software development tools

scientists
GS manpower
. **scientists**
personnel
. **scientists**
RT awards
engineers

Scimitar aircraft
UF *Vickers Scimitar aircraft*
GS attack aircraft
. fighter aircraft
. . **Scimitar aircraft**
BAC aircraft
. **Scimitar aircraft**
jet aircraft
. **Scimitar aircraft**
monoplanes
. **Scimitar aircraft**
RT∞ aircraft

scintillating fibers
(added December 1992)
UF *scintillation fibers*
GS fibers
. optical fibers
. . **scintillating fibers**
optical materials
. optical fibers
. . **scintillating fibers**
waveguides
. optical waveguides
. . optical fibers
. . . **scintillating fibers**
RT calorimeters
cosmic rays
fiber optics
gamma ray spectrometers
gamma ray telescopes
gamma rays
hodoscopes
photomultiplier tubes
radiation counters
scintillation
scintillation counters

scintillation
DEF Generic term for rapid variations in apparent position, brightness, or color of a distant luminous object viewed through the atmosphere. A flash of light produced in a phosphor by an ionizing event. On a radar display, a rapid apparent displacement of the target from its mean position.
RT glint
phosphorescence
scintillating fibers
seeing (astronomy)

scintillation counters
DEF The combinations of phosphor, photomultiplier tube, and associated circuits for counting scintillations. Used for scintillators and scintillometers.
UF *scintillators*
scintillometers
GS measuring instruments
. counters
. . radiation counters
. . . **scintillation counters**
. radiation measuring instruments
. . radiation counters
. . . **scintillation counters**
RT Cerenkov counters
neutron counters
particle telescopes
photomultiplier tubes

photopeak
scintillating fibers

scintillation fibers
USE **scintillating fibers**

scintillators
USE **scintillation counters**

scintillometers
USE **scintillation counters**

scission
USE **cleavage**

scoops
RT air intakes
conveyors
ducts
intake systems
nose inlets
side inlets
∞ water intakes

scopolamine
USE **hyoscine**

SCORE omnirange
USE **self calibrating omnirange**

SCORE satellite
GS artificial satellites
. **SCORE satellite**

scoring
UF *scribing*
RT abrasion
defects
friction
pitting
wear

Scorpio constellation
USE **Scorpius constellation**

Scorpius constellation
UF *Scorpio constellation*
GS constellations
. **Scorpius constellation**
RT zodiac

Scotchlite (trademark)
RT membrane structures
refractory materials

Scotland
GS nations
. United Kingdom
. . **Scotland**
RT Europe

Scout helicopter
USE **P-531 helicopter**

Scout launch vehicle
GS launch vehicles
. **Scout launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . **Scout launch vehicle**
RT Algol engine
Explorer 9 satellite
Explorer 16 satellite
Explorer 19 satellite
Explorer 20 satellite
Explorer 22 satellite
Explorer 23 satellite
Explorer 24 satellite
Explorer 25 satellite
Explorer 27 satellite
Explorer 30 satellite
Explorer 37 satellite
Explorer 39 satellite
Explorer 40 satellite
San Marco satellites
solid propellant rocket engines
TX-354 engine
X-248 engine
X-254 engine
X-258 engines
X-259 engine
XM-33 engine

Scout project
GS programs
. NASA programs
. . NASA space programs
. . . **Scout project**
. projects
. . **Scout project**
. space programs
. . NASA space programs
. . . **Scout project**
RT ∞ boosters
Explorer satellites
launch vehicles

SCPC transmission
USE **single channel per carrier transmission**

SCR (rectifiers)
USE **silicon controlled rectifiers**

∞ **SCRAM**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT missiles
shutdowns
supersonic combustion ramjet engines

scrambling (communication)
RT intelligibility
security
signal distortion
signal encoding
vocoders
voice communication

scramjet engines
USE **supersonic combustion ramjet engines**

scramjets
USE **supersonic combustion ramjet engines**

scrap
RT chips
debris
metal particles
wastes

scrapers
RT cutters
files (tools)
honing
∞ separation

screen effect
RT ∞ coma
dielectrics
Earth magnetosphere
∞ effects
electromagnetic wave filters
electromagnetic wave transmission
electron gas
semiconductors (materials)
wave propagation

∞ **screening**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT filtration
fines
louvers
selection
water treatment

∞ **screens**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT curtains
display devices
protectors
shielding
sizing screens
wire cloth

screw dislocations
GS defects
. crystal defects
. . crystal dislocations
. . . **screw dislocations**
dislocations (materials)
. crystal dislocations
. . **screw dislocations**
RT edge dislocations

screw pinch
DEF A cylindrical plasma equilibrium in which the axial and azimuthal components of the vacuum field are of the same size.
GS pinch effect
. plasma pinch
. . **screw pinch**
RT magnetic fields
magnetohydrodynamic flow
plasma control
reverse field pinch
theta pinch
zeta pinch

screws
SN (EXCLUDES PROPELLERS AND CRYSTAL DEFECTS)
GS fasteners
. **screws**
RT anchors (fasteners)
bolts
couplings
holders
nuts (fasteners)
studs (structural members)
threads

scribing
USE **scoring**

scrubbers
DEF Apparatus used in sampling and in gas cleaning in which the gas is passed through a space containing wetted "packing" or spray.
RT cleaning
columns (process engineering)
flue gases
washing

scrubbing
USE **washing**

scrubs (botany)
USE **brush (botany)**

Scutum constellation
GS constellations
. **Scutum constellation**
RT zodiac

Scylla
GS plasma generators
. **Scylla**
RT magnetic fields
magnetic mirrors
magnetic variations
plasmas (physics)
thermonuclear reactions

SDP (computers)
USE **site data processors**

SDS 900 series computers
GS data processing equipment
. computers
. . digital computers
. . . **SDS 900 series computers**
. . . . SDS 930 computer

SDS 930 computer
GS data processing equipment
. computers
. . digital computers
. . . SDS 900 series computers
. . . . **SDS 930 computer**

SDS 9300 computer
GS data processing equipment
. computers
. . digital computers
. . . **SDS 9300 computer**

SDV
USE **Shuttle Derived Vehicles**

SE-210 aircraft
UF *Caravelle aircraft*
Sud Aviation SE-210 aircraft
GS commercial aircraft
. **SE-210 aircraft**
jet aircraft
. turbofan aircraft
. . **SE-210 aircraft**
monoplanes
. **SE-210 aircraft**
passenger aircraft
. **SE-210 aircraft**
Sud Aviation aircraft
. **SE-210 aircraft**
RT∞ aircraft

SE-3160 helicopter
UF *Alouette 3 helicopter*
Sud Aviation SE-3160 helicopter
GS Sud Aviation aircraft
. Alouette helicopters
. . **SE-3160 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . Alouette helicopters
. . . . **SE-3160 helicopter**

SE-A
USE **Explorer 30 satellite**

sea breeze
DEF A coastal, local wind that blows from sea to land caused by temperature differences when the sea surface is colder than the adjacent land.
GS wind (meteorology)
. **sea breeze**
RT aerology
air currents
atmospheric circulation
barotropic flow
climatology
geostrophic wind
gusts
marine environments
meteorology
monsoons
offshore energy sources
tidal waves
wind direction
wind effects
wind erosion
wind measurement
windpower utilization
winds aloft

sea floor spreading
(added July 1992)
DEF A hypothesis that the oceanic crust is increasing by convective upwelling of magma along the mid-ocean ridges or world rift system, and by a moving-away of the new material at a rate of one to ten centimeters per year. This movement provides the source of dynamic thrust in the hypothesis of plate tectonics.
UF *ocean floor spreading*
RT Earth crust
Earth mantle
Earth movements
mid-ocean ridges
ocean bottom
plates (tectonics)
tectonics
terradynamics

sea grasses
GS plants (botany)
. grasses
. . **sea grasses**
RT marine biology
oceanography
seaweeds
vegetation
wetlands

sea ice
UF *ice packs*
GS ice
. **sea ice**
. . ice floes
. . icebergs
. . pressure ice
RT air sea ice interactions
bay ice
freezing
glacial drift
glaciers
ice environments
ice formation
ice mapping
lake ice
land ice
nunataks
oceanography

sea keeping
DEF Maintaining the stability of a surface vessel in linear response to wave height, pitch, heave, center of gravity, and bow acceleration.
RT attitude gyros
damping
gyroscopic stability
gyrostabilizers
motion stability
∞ stabilizers
torquers

Sea King helicopter
USE **SH-3 helicopter**

Sea Knight helicopter
USE **CH-46 helicopter**

sea launching
GS launching
. **sea launching**
RT antiship missiles
antiship warfare
ballistic missile submarines
catapults
drydocks
fleet ballistic missiles
missile launchers
Poseidon missiles
rocket launchers
torpedoes
water takeoff and landing aircraft

sea law
DEF United Nations declaration regarding rights to minerals and other marine resources.
GS law (jurisprudence)
. international law
. . **sea law**
RT∞ cooperation
international cooperation
rules
United Nations

sea level
DEF The level of the surface of the ocean; especially, the mean level halfway between high and low tide used as a standard in reckoning land elevation or sea depths.
GS altitude
. **sea level**
RT ocean surface
oceanography
sea states

Sea of Japan
GS seas
. **Sea of Japan**
RT Asia

Sea of Okhotsk
GS seas
. **Sea of Okhotsk**
RT Pacific Ocean
U.S.S.R.

sea roughness
GS roughness
. **sea roughness**
RT hydrodynamic coefficients
ocean models
ocean surface
oceanography
surface waves
tidal waves
tide powered generators
tide powered machines
tidepower
tides
turbulence
water currents
water waves
waterwave energy conversion
waterwave powered machines
wind effects
wind velocity

sea states
RT ocean models
ocean surface
ocean temperature
oceanographic parameters
oceanography
sea level
TOPEX
water currents

water waves
wind effects

sea surface temperature
GS oceanographic parameters
. ocean temperature
. . **sea surface temperature**
surface properties
. surface temperature
. . **sea surface temperature**
temperature
. surface temperature
. . **sea surface temperature**
. water temperature
. . ocean temperature
. . . **sea surface temperature**
RT air water interactions
land surface temperature
ocean surface
oceanography

sea truth
RT aerial photography
coastal currents
imagery
ocean surface
ocean temperature
photointerpretation

sea urchins
GS animals
. invertebrates
. . **sea urchins**

sea walls
USE **breakwaters**

sea water
GS water
. **sea water**
RT brines
coastal water
dissolved organic matter
fisheries
marine resources
nearshore water
ocean surface
ocean temperature
oceanography
red tide
salinity
seaweeds
thermoclines
underwater photography
underwater resources
water resources

Seafarer project
UF *Global Communications Antenna Grid (navy)*
underground radio antenna grid (navy)
GS programs
. projects
. . **Seafarer project**
RT extremely low frequencies
radio transmission
submarines
telecommunication
underwater communication

Seahorse helicopter
USE **UH-34 helicopter**

sealants
USE **sealers**

sealers
UF *sealants*
RT adhesives
coatings
dopes
fillers
packaging
packings (seals)
paints
sealing
seals (stoppers)
seams (joints)
solders
varnishes

sealing
GS **sealing**
. **self sealing**
RT adhesion
adhesive bonding
binding
blocking
blowers
bonding
brazing
caulking
cements
clamps
closing
coating
coatings
containment
coverings
encapsulating
glands (seals)
∞ joining
lining processes
moisture resistance
∞ packing
packings (seals)
plugging
retaining
riveting
sealers
soldering
spraying
stopping
waterproofing
welding

seals (animals)
GS animals
. vertebrates
. . mammals
. . . marine mammals
. . . . **seals (animals)**
RT marine biology

seals (stoppers)
GS **seals (stoppers)**
. brush seals
. gaskets
. glands (seals)
. hermetic seals
. labyrinth seals
. O ring seals
. packings (seals)
. plugs
. pump seals
RT air locks
barrier layers
∞ barriers
blocking
∞ caps
closures
constrictions
cuffs
plugging
sealers
spherical caps
∞ tapes
valves

seamounts
DEF Elevations of the ocean floor rising to about 3000–1000 feet or more with the summit about 1000–6000 feet below sea level.
RT continental shelves
crevasses
∞ faults
folds (geology)
islands
landforms
mid-ocean ridges
ocean bottom
structural basins

seams (joints)
GS joints (junctions)
. **seams (joints)**
RT adhesives
fillets
metal joints
sealers

seaplanes
GS water takeoff and landing aircraft
. **seaplanes**
RT amphibious aircraft
amphibious vehicles
hulls (structures)
monoplanes

Search and Rescue Satellite
USE **SarSat**

Search for Extraterrestrial Intelligence
USE **Project SETI**

search profiles
GS searching
. **search profiles**
RT data retrieval
information retrieval
∞ profiles

search radar
GS radar
. **search radar**
. . over-the-horizon radar
RT airport surface detection equipment
coherent radar
continuous wave radar
pulse radar
radar detection
radar tracking
satellite-borne radar
side-looking radar
surveillance radar
tracking radar
TRADEX radar system

searching
GS **searching**
. search profiles
RT conical scanning
COSPAS
panoramic scanning
reconnaissance
retrieval
SarSat
scanning
selection

searchlights
GS lighting equipment
. luminaires

. . **searchlights**
RT airport lights
arc lamps
beacons
projectors
runway lights

seas
DEF Inland bodies of salt water or geographic divisions of oceans or ocean areas of wave generation.
GS **seas**
. Arabian Sea
. Baltic sea
. Barents Sea
. Beaufort Sea (North America)
. Bering Sea
. Black Sea
. Caribbean Sea
. Caspian Sea
. Chukchi Sea
. Mediterranean Sea
. . Adriatic Sea
. North Sea
. Red Sea
. Salton Sea (CA)
. Sea of Japan
. Sea of Okhotsk
RT archipelagoes
coastal currents
coasts
deep water
Earth hydrosphere
ocean temperature
oceanography
oceans
Sargasso Sea
seaweeds
shallow water
shoals
straits
thermal pollution
underwater photography

SEASAT 1
GS artificial satellites
. SEASAT satellites
. . **SEASAT 1**
RT Landsat satellites
oceanography
programs
SEASAT-B satellite

SEASAT program
GS programs
. NASA programs
. . NASA space programs
. . . Earth Resources Program
. . . . Earth Resources Survey Program
. . . . . **SEASAT program**
. space programs
. . NASA space programs
. . . Earth Resources Program
. . . . Earth Resources Survey Program
. . . . . **SEASAT program**
RT Landsat satellites
oceanography

SEASAT satellites
GS **artificial satellites**
. **SEASAT satellites**
. . SEASAT 1
. . SEASAT-B satellite
RT Landsat satellites
NASA programs
oceanography
programs
satellite altimetry
Synchronous Earth Observatory satellite

SEASAT-B satellite
GS artificial satellites
. SEASAT satellites
. . **SEASAT-B satellite**
RT Landsat satellites
oceanography
programs
SEASAT 1

seasonal variations
USE **annual variations**

seasons
GS **seasons**
. autumn
. spring (season)
. summer
. winter
RT annual variations
climatology
crop calendars
equinoxes
meteorology
solar position
solstices
weather
wind variations

Seasprite helicopter
USE **UH-2 helicopter**

seat belts
DEF Safety belts that fasten across the lap.
GS safety devices
. **seat belts**
RT ∞ belts
harnesses
seats

seats
UF *benches*
chairs
GS **seats**
. Barany chair
. ejection seats
. . flying ejection seats
RT comfort
couches
cushions
harnesses
∞ lounges
riding quality
seat belts
sitting position

seaweeds
UF *kelp*
RT marine biology
oceanography
oceans
sea grasses
sea water
seas

sebaceous glands
GS anatomy
. glands (anatomy)
. . **sebaceous glands**

sebacic acid
GS acids
. carboxylic acids
. . fatty acids
. . . **sebacic acid**
organic compounds
. carboxylic acids
. . fatty acids
. . . **sebacic acid**

secondary batteries
USE **storage batteries**

secondary cosmic rays
DEF Secondary emission in the atmosphere stimulated by primary cosmic rays. Used for Moliere formula.
UF *Moliere formula*
GS ionizing radiation
. cosmic rays
. . **secondary cosmic rays**
RT atmospheric radiation
cosmic ray albedo
cosmic ray showers
electron decay rate
electron photon cascades
electron precipitation
primary cosmic rays
single event upsets

secondary emission
DEF Emission of subatomic particles of photons stimulated by primary radiation; for example, cosmic rays impinging on other particles and causing them, by disruption of their electron configurations or even of their nuclei, to emit particles or photons or both in turn.
GS emission
. particle emission
. . electron emission
. . . **secondary emission**
RT dynodes
electron irradiation
field emission
monoscopes
multipactor discharges
photomultiplier tubes
scanning electron microscopy
Townsend avalanche

secondary flow
GS fluid flow
. parallel flow
. . three dimensional flow
. . . **secondary flow**
. viscous flow
. . boundary layer flow
. . . **secondary flow**
translational motion
. three dimensional motion
. . three dimensional flow
. . . **secondary flow**
RT compressibility effects
corner flow
three dimensional boundary layer
vortices
vorticity

secondary injection
GS injection
. **secondary injection**
RT fluid injection
shock wave control
shock wave propagation
supersonic flow
thrust augmentation
thrust vector control

secondary ion mass spectrometry
(added July 1991)
DEF Mass spectrometry performed on ions sputtered from a sample by a primary ion beam.
UF *SIMS (spectrometry)*
GS spectroscopy

. mass spectroscopy
. . secondary ion mass spectrometry
RT mass spectrometers

secondary radar
DEF A radar technique or mode of operation in which the return signals are obtained from beacons, transponders, or repeaters carried by the targets, contrasted with primary radar in which the return signals are obtained by reflection from the targets.
GS radar
. secondary radar
RT discrete address beacon system
interrogation

secondary waves
USE **S waves**

secretions
GS secretions
. endocrine secretions
. . hormones
. . . corticosteroids
. . . . aldosterone
. . . . hydroxycorticosteroid
. . . . . cortisone
. . . estrogens
. . . hypertensin
. . . pituitary hormones
. . . . adrenocorticotropin (ACTH)
. . . prostaglandins
. . . thyroxine
. . insulin
. sweat
RT body fluids
gall
glands (anatomy)
hydrogen metabolism
metabolism
mineral metabolism
skin (anatomy)

∞ **sections**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT categories
classes
subdivisions
subsidiaries

∞ **sectors**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT area
circles (geometry)
regions

secular perturbation
USE **long term effects**

secular variations
GS variations
. periodic variations
. . secular variations
RT atmospheric physics
solar activity effects
solar cycles
teleconnections (meteorology)

security
GS security
. airport security
. computer information security
RT ∞ classifying
computer program integrity
crime
integrity
police
privacy
scrambling (communication)
selective dissemination of information
vulnerability

sedatives
GS drugs
. sedatives
RT pentobarbital
phenobarbital
psychotropic drugs
tranquilizers

sediment transport
RT mass flow
mass transfer
sediments

sedimentary rocks
DEF Rocks resulting from the consolidation of loose sediments that have accumulated in layers, e.g., clastic rocks (such as fragments of older rocks transported from their source and deposited in water or from air or ice. Sedimentary rocks constitute one of the three main classes into which rocks are divided, the others being igneous rocks and metamorphic rocks.
GS rocks
. sedimentary rocks
. . carbonaceous rocks
. . . coal
. . . . anthracite
. . . . lignite
. . . . solvent refined coal
. . limestone
. . sandstones
. . shales
RT alluvium
breccia
clays
dolomite (mineral)
gypsum
igneous rocks
∞ layers
monazite sands
petrography
sands
sediments
shatter cones
soils
stratigraphy

sediments
DEF Solid fragmental materials that originate from weathering of rocks and are transported or deposited by air, water, or ice, or that accumulate by other natural agents, such as chemical precipitation from solution or secretion by organisms, and that form in layers on the Earth's surface at ordinary temperatures in a loose, unconsolidated form; e.g., sand, gravel, silt, mud, till, loess, and alluvium.
UF *silts*
GS sediments
. gravels
. mud
. sands
. . monazite sands
. . tar sands
RT alluvium
clays
deposition
deposits
dissolved organic matter
dredged materials
fans (landforms)
glacial drift
grit
littoral drift
marine chemistry
ocean bottom
peat
sediment transport
sedimentary rocks
sewage treatment
sludge
soil pollution

SEE (software engineering environments)
USE **programming environments**

Seebeck coefficient
USE **Seebeck effect**

Seebeck effect
DEF The establishment of an electric potential difference tending to produce a flow of current in a circuit of two dissimilar metals the junctions of which are at different temperatures. Used for Seebeck coefficient.
UF *Seebeck coefficient*
RT ∞ effects
Peltier effects
temperature effects
thermocouples
thermodynamic properties
thermoelectricity
thermophysical properties
transport properties

seeding (inoculation)
USE **inoculation**

seeds
RT alfalfa
barley
citrus trees
corn
embryos
farm crops
grains (food)
nuts (fruits)
oats
planting
plants (botany)
sugar beets
sugar cane
tomatoes
utricle
vegetables
viability

seeing (astronomy)
(added July 1989)
UF *atmospheric seeing*
RT astronomical observatories
astronomy
atmospheric effects
atmospheric optics
atmospheric turbulence
optical correction procedure
scintillation
space observations (from Earth)
telescopes
turbulence effects
visual observation

seekers
USE **homing devices**

seepage
RT canals
drainage
flood damage
flow nets

hydrodynamics
intrusion
irrigation
leakage
losses
offshore energy sources
penetration
percolation
permeability
piezometers
water consumption

segmented mirrors
(added August 1995)
DEF Telescope mirrors made up of many small, thin, glass segments. Motorized controllers keep the segments optically aligned to form a single large mirror.
GS mirrors
. **segmented mirrors**
RT adaptive optics
astronomical observatories
honeycomb mirrors
optical correction procedure
reflecting telescopes

segments
RT circles (geometry)
∞ components
curves (geometry)
lines (geometry)
radii

Segre characteristic
RT ∞ characteristics
crack propagation
metal fatigue

segregation
USE **separation**

seismic energy
RT earthquake damage
∞ energy
strain energy methods

seismic waves
DEF The disturbance of earth tremors produced by a mechanical disturbance on the surface or underground. Used for electroseismic effect.
UF *electroseismic effect*
GS elastic waves
. **seismic waves**
. . Love waves
. . microseisms
. . Rayleigh waves
RT crustal fractures
detonation waves
dilatational waves
Earth movements
earthquake damage
earthquake resistance
earthquake resistant structures
earthquakes
Gutenberg zone
large aperture seismic array
longitudinal waves
P waves
planetary quakes
polarized elastic waves
S waves
seismology
SH waves
shock waves
surface waves
tsunami waves
underground explosions
∞ **waves**

seismocardiography
DEF The measurement of the high frequency vibrations of the heart.
GS bioengineering
. biometrics
. . cardiography
. . . **seismocardiography**
RT ballistocardiography
fibrillation

seismograms
RT seismographs

seismographs
UF *seismometers*
GS measuring instruments
. vibration meters
. . **seismographs**
. . . lunar seismographs
recording instruments
. **seismographs**
. . lunar seismographs
RT accelerometers
acoustic measurement
phased arrays
seismograms
shock measuring instruments
tiltmeters

seismology
DEF The study of earthquakes, by extension, the structure of the interior of the Earth via both natural and artificially generated seismic signals.
GS **seismology**
. helioseismology
. moonquakes
RT asthenosphere
crustal fractures
Earth movements
Earth sciences
earthquake damage
earthquakes
geology
geophysics
isostasy
large aperture seismic array
lunar geology
mid-ocean ridges
Rouse belts
∞ science
seismic waves
subduction (geology)
tidal waves

seismometers
USE **seismographs**

seizures
RT convulsions
cramps

SEL computers
GS data processing equipment
. computers
. . digital computers
. . . **SEL computers**

selection
UF *choice*
GS **selection**
. personnel selection
. . pilot selection
. **site selection**
RT certification
∞ classifying
collection
decisions
evaluation
figure of merit
options
ranking
rejection
sampling
∞ screening
searching
sorting algorithms
∞ tests

selection rules (nuclear physics)
GS rules
. **selection rules (nuclear physics)**
RT alpha decay
emission
forbidden transitions
neutron emission
∞ physics
quantum numbers

selective dissemination of information
GS communicating
. information dissemination
. . **selective dissemination of information**
RT computer information security
data storage
documentation
indexes (documentation)
information flow
information retrieval
information systems
libraries
management planning
security
technology transfer

selective fading
GS fading
. signal fading
. . **selective fading**
RT frequency analyzers
ground wave propagation
modulation
sidebands
signal fading rate

selective surfaces
DEF Surfaces, often coated, for which the spectral optical properties, such as reflectance, absorptance, emittance, or transmittance vary significantly with wavelength. Such properties are of interest in solar energy applications. Used for solar selective coatings.
UF *solar selective coatings*
RT energy absorption films
selectivity
solar collectors
solar energy absorbers

selectivity
RT discrimination
photothermal conversion
selective surfaces

selectors
RT analyzers
circuits
electric relays
samplers
switches
switching circuits

selenides
GS chalcogenides
. **selenides**

. . cadmium selenides
. . copper selenides
. . . copper indium selenides
. . gallium selenides
. . indium selenides
. . . copper indium selenides
. . lead selenides
. . zinc selenides
selenium compounds
. selenides
. . cadmium selenides
. . copper selenides
. . . copper indium selenides
. . gallium selenides
. . indium selenides
. . . copper indium selenides
. . lead selenides
. . zinc selenides

selenium
GS chemical elements
. **selenium**
RT selenium isotopes

selenium alloys
GS alloys
. **selenium alloys**
RT copper

selenium compounds
GS **selenium compounds**
. selenides
. . cadmium selenides
. . copper selenides
. . . copper indium selenides
. . gallium selenides
. . indium selenides
. . . copper indium selenides
. . lead selenides
. . zinc selenides
. selenium oxides
RT ∞ chemical compounds
Group 6A compounds

selenium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **selenium isotopes**
RT selenium

selenium oxides
GS chalcogenides
. oxides
. . **selenium oxides**
selenium compounds
. **selenium oxides**

selenography
RT geography
lunar craters
lunar crust
lunar landing sites
lunar maps
lunar mobile laboratories
lunar rays
lunar rocks
lunar topography
moon
selenology
surface properties

selenology
DEF That branch of astronomy that treats of the moon, its magnitude, motion, constitution, and the like. Selene is Greek for moon.
RT astronomy
lunar composition
lunar cores
lunar craters
lunar crust
lunar dust
lunar echoes
lunar eclipses
lunar effects
lunar environment
lunar equator
lunar evolution
lunar exploration
lunar far side
lunar figure
lunar geology
lunar gravitation
lunar gravitational effects
lunar limb
lunar luminescence
lunar magnetic fields
lunar mantle
lunar maria
lunar occultation
lunar phases
lunar radar echoes
lunar radiation
lunar rocks
lunar rotation
lunar seismographs
lunar shadow
lunar soil
lunar surface
lunar temperature
lunar tides
lunar topography
moon
moonquakes
regolith
selenography

self absorption
GS energy absorption
. radiation absorption
. . **self absorption**
RT ∞ absorption
absorption spectra
absorptivity
automatic control
diffusion
∞ radiation

self adaptive control systems
DEF Particular types of stability augmentation systems which change the responses of given control inputs by constantly sampling responses and adjusting their gain, rather than having fixed or selective gain systems.
GS automatic control
. adaptive control
. . **self adaptive control systems**
RT active control
adaptive optics
automata theory
autonomy
∞ control
∞ systems

self alignment
GS alignment
. **self alignment**
RT active control
adaptive control
automatic control
landing gear
modal reference adaptive control
servomechanisms

self calibrating omnirange
UF *SCORE omnirange*
GS navigation aids
. beacons
. . radio beacons
. . . omnidirectional radio ranges
. . . . **self calibrating omnirange**
radio equipment
. radio transmitters
. . radio beacons
. . . omnidirectional radio ranges
. . . . **self calibrating omnirange**
transmitters
. radio transmitters
. . radio beacons
. . . omnidirectional radio ranges
. . . . **self calibrating omnirange**
RT solar compasses

self consistent fields
UF *SCF*
RT computational chemistry
field theory (physics)
∞ fields
Hartree approximation
magnetic fields
molecular orbitals
quantum electrodynamics
shell theory

self deploying space stations
USE **self erecting devices**
space stations

self diffusion (solid state)
DEF The spontaneous movement of an atom to a new site in a crystal of its own species.
GS diffusion
. ***self diffusion* (solid state)**
RT atomic mobilities
ionic diffusion
molecular diffusion
particle diffusion

self erecting devices
UF *self deploying space stations*
RT ∞ automation
∞ devices
∞ equipment
inflatable spacecraft
inflatable structures
orbital assembly
space erectable structures

self excitation
GS excitation
. **self excitation**
RT forced vibration
free vibration
oscillators
resonators

self focusing
GS focusing
. **self focusing**
RT image contrast
∞ machinery
optical correction procedure
optical measuring instruments

self ignition
USE **spontaneous combustion**

self induced vibration
GS vibration
. structural vibration
. . **self induced vibration**
. . . panel flutter

. . . subsonic flutter
. . . supersonic flutter
. . . transonic flutter
RT bending vibration
flutter
forced vibration
free vibration
missile vibration
pilot induced oscillation
random vibration
torsional vibration

self initiated antiaircraft missiles
USE **SIAM missiles**

self lubricating materials
RT impregnating
lubrication
∞ materials
solid lubricants
spacecraft lubrication

self lubrication
GS lubrication
. **self lubrication**
RT impregnating

self maneuvering units
UF *personnel propulsion systems*
reaction jet backpacks
SMU (maneuvering units)
space self maneuvering units
GS **self maneuvering units**
. IMLSS
RT astronaut maneuvering equipment
extravehicular activity
extravehicular mobility units
maneuvers
manned maneuvering units

self organizing systems
UF *perceptrons*
RT artificial intelligence
machine learning
∞ systems
Turing machines

self oscillation
GS oscillations
. **self oscillation**
RT feedback amplifiers
positive feedback
transfer functions

self propagation
GS diffusion
. **self propagation**
transmission
. **self propagation**
RT ∞ propagation

self regulating
USE **automatic control**

self repairing devices
RT ∞ automation
∞ devices
maintenance

self sealing
GS sealing
. **self sealing**
RT flight safety
fuel systems
rupturing
. support systems

self shadowing
RT large space structures
shadows
solar arrays

self stimulation
RT motivation
reinforcement (psychology)

self subtraction holography
USE **holographic subtraction**

self sustained emission
GS emission
. **self sustained emission**
RT electron emission
light emission
particle emission
. stimulated emission

self tests
DEF Programmed functions performed by a machine, either automatically at start-up or on user demand, that test the working order of the machine. In particular, programs stored in read-only memory that test the integrity of a machine's integrated circuits and the connections between the circuits and the devices they control.
RT automatic test equipment
avionics
checkout
electronic equipment tests
fail-safe systems
∞ tests

Selsyns (trademark)
USE **servomotors**

SEM (microscopy)
USE **scanning electron microscopy**

semantics
GS linguistics
. **semantics**
RT communication theory
grammars
languages
message processing
messages
natural language processing
nomenclatures
orthography
parsing algorithms
predicate logic
psycholinguistics
sentences
speech
syllables
symbols
syntax
words (language)

semicircular canals
DEF Structures of the inner ear, the primary function of which is to register movement of the body in space. They respond to change in the rate of movement.
GS anatomy
. sense organs
. . ear
. . . labyrinth
. . . . **semicircular canals**
RT eardrums
middle ear
otolith organs
vestibules

semiconducting films
RT amorphous semiconductors
amorphous silicon
diamond films
energy absorption films
∞ films
superconducting films
thick films
thin films

semiconductor devices
DEF Electron devices in which the characteristic distinguishing electronic conduction takes place within semiconductors.
GS electronic equipment
. solid state devices
. . **semiconductor devices**
. . . avalanche diodes
. . . . cryosar
. . . Barritt diodes
. . . charge transfer devices
. . . . bucket brigade devices
. . . . charge coupled devices
. . . . charge injection devices
. . . germanium diodes
. . . heterojunction devices
. . . . high electron mobility transistors
. . . . . MODFETS
. . . junction diodes
. . . . MIM diodes
. . . . step recovery diodes
. . . light emitting diodes
. . . metal oxide semiconductors
. . . . CMOS
. . . . ITO (semiconductors)
. . . . SOS (semiconductors)
. . . MIM (semiconductors)
. . . MIS (semiconductors)
. . . MOM (semiconductors)
. . . MSM (semiconductors)
. . . NDM semiconductor devices
. . . neuristors
. . . parametric diodes
. . . photodiodes
. . . photovoltaic cells
. . . . solar cells
. . . . . vertical junction solar cells
. . . Schottky diodes
. . . semiconductor lasers
. . . . aluminum gallium arsenide lasers
. . . . gallium arsenide lasers
. . . . quantum well lasers
. . . . YLF lasers
. . . SOI (semiconductors)
. . . thermistors
. . . thyristors
. . . . silicon controlled rectifiers
. . . transferred electron devices
. . . transistor amplifiers
. . . transistors
. . . . bipolar transistors
. . . . field effect transistors
. . . . . charge flow devices
. . . . . JFET
. . . . . MODFETS
. . . . high electron mobility transistors
. . . . . MODFETS
. . . . junction transistors
. . . . . JFET
. . . . phototransistors
. . . . silicon transistors
. . . . . SOS (semiconductors)
. . . TRAPATT devices
. . . varactor diodes
. . . varistors
RT barrier layers
bubble technique
chips (memory devices)
crystal rectifiers
diffusion electrodes

diffusion length
diodes
Gunn diodes
Gunn effect
Hall effect
hybrid circuits
ion implantation
∞ junctions
microminiaturization
modulation doping
molecular electronics
nanostructures (devices)
organic semiconductors
oscillators
parametric amplifiers
pentodes
quantum dots
quantum wires
rectifiers
semiconductors (materials)
silicon films
tetrodes
triodes
tunnel junctions
wafers

semiconductor diodes
DEF Two-electrode semiconductor devices utilizing the rectifying properties of junctions or point contacts.
GS electronic equipment
. diodes
. . **semiconductor diodes**
. . . avalanche diodes
. . . . cryosar
. . . Barritt diodes
. . . germanium diodes
. . . Gunn diodes
. . . . transferred electron devices
. . . junction diodes
. . . . MIM diodes
. . . . step recovery diodes
. . . light emitting diodes
. . . parametric diodes
. . . photodiodes
. . . Schottky diodes
. . . tunnel diodes
. . . varactor diodes
RT MIM diodes
SIS (semiconductors)
thermionic diodes

semiconductor insulator semiconductors
USE **SIS (semiconductors)**

semiconductor junctions
GS **semiconductor junctions**
. heterojunctions
. homojunctions
. MBM junctions
. n-n junctions
. n-p-n junctions
. p-i-n junctions
. p-n junctions
. p-n-p junctions
. p-n-p-n junctions
. silicon junctions
RT Barritt diodes
heterojunction devices
∞ junctions
MSM (semiconductors)
n-type semiconductors
p-type semiconductors
Schottky diodes
SIS (semiconductors)
threshold voltage
tunnel junctions

semiconductor lasers
UF *laser diodes*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **semiconductor lasers**
. . . . aluminum gallium arsenide lasers
. . . . gallium arsenide lasers
. . . . quantum well lasers
. . . . YLF lasers
stimulated emission devices
. lasers
. . **semiconductor lasers**
. . . aluminum gallium arsenide lasers
. . . gallium arsenide lasers
. . . quantum well lasers
. . . YLF lasers
RT Bragg reflectors
DBR lasers
distributed feedback lasers
fiber lasers
gadolinium-gallium garnet
gallium arsenides
Gunn effect
injection lasers
laser arrays
laser cavities
optical switching
pulsed lasers
Q switched lasers
quantum dots
quantum wires
solid state lasers
surface emitting lasers
waveguide lasers

semiconductor plasmas
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **semiconductor plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **semiconductor plasmas**
RT electron mobility
electron-hole drops
holes (electron deficiencies)
plasma physics
semiconductors (materials)

semiconductors (materials)
DEF Electronic conductors, with resistivity in the range between metals and insulators, in which the electrical charge carrier concentration increases with increasing temperature over some temperature range. Certain semiconductors possess two types of carriers, namely, negative electrons and positive holes.
GS **semiconductors (materials)**
. acceptor materials
. amorphous semiconductors
. . amorphous silicon
. donor materials
. metal oxide semiconductors
. . CMOS
. . ITO (semiconductors)
. . SOS (semiconductors)
. metal-nitride-oxide-semiconductors
. metal-nitride-oxide-silicon
. MIM (semiconductors)
. MIS (semiconductors)
. MOM (semiconductors)
. n-type semiconductors
. organic semiconductors
. photoconductors
. p-type semiconductors
. superlattices
. Vycor
RT aluminum arsenides
antisite defects
bipolar transistors
bucket brigade devices
carrier density (solid state)
carrier injection
charge injection devices
conducting polymers
conduction bands
conductors
copper indium selenides
electric conductors
electron affinity
electron density (concentration)
electron tunneling
electrons
emitters
excitons
gadolinium-gallium garnet
gallium nitrides
hole distribution (electronics)
holes (electron deficiencies)
indium antimonides
indium gallium arsenides
indium selenides
indium tellurides
intermetallics
majority carriers
∞ materials
melts (crystal growth)
metalloids
minority carriers
modulation doping
nanostructure (characteristics)
negative electron affinity
organic charge transfer salts
polyacetylene
pseudopotentials
resistors
screen effect
semiconductor devices
semiconductor plasmas
∞ solid state physics
thermoelectric materials

semiempirical equations
RT algebra
∞ equations
parameterization

semimetals
USE **metalloids**

semiregular variable stars
GS celestial bodies
. stars
. . variable stars
. . . **semiregular variable stars**
RT irregular variable stars
periodic variations

semisolids
RT plastic properties
solids
thixotropy
viscous fluids

semispan models
GS models
. **semispan models**
RT aerodynamic configurations
aircraft models
scale models

wind tunnel models

Senarmont polariscopes
GS measuring instruments
. polariscopes
. . **Senarmont polariscopes**
optical equipment
. polariscopes
. . **Senarmont polariscopes**
RT **lasers**
optical measuring instruments

senders
USE **transmitters**

Seneca aircraft
USE **PA-34 Seneca aircraft**

Senegal
GS nations
. **Senegal**
RT Africa

sense organs
GS anatomy
. **sense organs**
. . baroreceptors
. . chemoreceptors
. . ear
. . . eardrums
. . . eustachian tubes
. . . labyrinth
. . . . cochlea
. . . . . Corti organ
. . . . otolith organs
. . . . semicircular canals
. . . . vestibules
. . . middle ear
. . eye (anatomy)
. . . choroid membranes
. . . conjunctiva
. . . cornea
. . . oculomotor nerves
. . . pupils
. . . retina
. . . . fovea
. . gravireceptors
. . . otolith organs
. . mechanoreceptors
. . photoreceptors
. . proprioceptors
. . thermoreceptors
RT fingers
head (anatomy)
nervous system
olfactory perception
organs
perceptual time constant
receptors (physiology)
sensitometry
skin (anatomy)

senses
USE **sensory perception**

sensibility
USE **sensitivity**

sensing
USE **detection**

sensitivity
DEF Response of a mathematical model to variations of the input parameters. Used for insensitivity and sensibility.
UF *insensitivity*
sensibility
GS **sensitivity**
. anaphylaxis
. impact resistance
. notch sensitivity
. pain sensitivity
. photosensitivity
. . light adaptation
. . phototropism
. propellant sensitivity
. radiation tolerance
. sensitometry
. spectral sensitivity
RT acuity
adaptation
amplification
auditory perception
dynamic characteristics
dynamic response
frequency response
itching
perception
precision
range (extremes)
reaction time
∞ resistance
resolution
sensitizing
shock resistance
∞ thresholds
holds (perception)
es (mechanics)
functions
transient response
visibility
vulnerability

sensitizing
RT activation
actuation
anaphylaxis
corrosion prevention
sensitivity

sensitometry
DEF The measurement of the light response characteristics of photographic film under specified conditions of exposure and development.
GS sensitivity
. **sensitometry**
RT gravireceptors
mechanoreceptors
photoreceptors
photosensitivity
proprioceptors
radiation measurement
receptors (physiology)
sense organs
thermoreceptors

sensor fusion
USE **multisensor fusion**

sensorimotor performance
GS **sensorimotor performance**
. psychomotor performance
. . psychosomatics
RT afferent nervous systems
efferent nervous systems
human performance
human reactions
perceptual time constant
physiological tests
pilot performance
reaction time
sensory feedback

∞ **sensors**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Devices designed to respond to physical stimuli (as temperature, illumination, and motion) and transmit a resulting signal for interpretation, or measurement, or for operating a control. Used for pickoffs and pickups.
UF *pickoffs*
pickups
RT bioinstrumentation
character recognition
charge flow devices
contour sensors
crop identification
data acquisition
electronic transducers
FLIR detectors
gas detectors
guidance sensors
image velocity sensors
laser gyroscopes
measuring instruments
microwave sensors
multispectral linear arrays
remote sensors
robot sensors
servomotors
tactile sensors (robotics)
torque sensors (robotics)
transducers

sensory deprivation
GS deprivation
. **sensory deprivation**
RT confinement
confining
monotony
perception

sensory discrimination
GS discrimination
. **sensory discrimination**
. . brightness discrimination
. . tactile discrimination
. . visual discrimination
RT speech recognition
time discrimination

sensory feedback
UF *feelings*
GS feedback
. biofeedback
. . **sensory feedback**
RT emotional factors
emotions
moods
moon illusion
nonlinear feedback
perception
sensorimotor performance

sensory perception
UF *senses*
GS perception
. **sensory perception**
. . auditory perception
. . consciousness
. . extrasensory perception
. . kinesthesia
. . olfactory perception
. . pain
. . pain sensitivity
. . proprioception
. . . autokinesis
. . taste
. . touch

. . . tactile discrimination
. . vertical perception
. . vibration perception
. . visual perception
. . . critical flicker fusion
. . . space perception
. . . . autokinesis
. . . visual discrimination
RT afterimages
anesthesia
electrocutaneous communication
itching

sensory stimulation
GS stimulation
. **sensory stimulation**
RT chronaxy
emotional factors
subliminal stimuli

sentences
RT communication theory
languages
messages
semantics
signal reception
signal transmission
speech
syntax
talking
words (language)

Sentinel system
GS **weapon systems**
. **Sentinel system**
RT antimissile defense
antimissile missiles
civil defense
Nike missiles
Safeguard system
Spartan missile
Sprint missile
surface to air missiles
∞ systems

SEO (Indian spacecraft)
USE **Indian spacecraft**

SEOCS (satellite)
DEF An ESA meteorological satellite designed for sun–Earth observation and climatology.
GS artificial satellites
. meteorological satellites
. . **SEOCS (satellite)**

SEOS
USE **Synchronous Earth Observatory satellite**

SEPAC (payload)
DEF Space experiment particle accelerators. A Spacelab 1 payload that experiments on the Earth's ionosphere and magnetosphere. Used for Space Exper with Particle Accelerators.
UF *Space Exper with Particle Accelerators*
GS payloads
. **SEPAC (payload)**
RT ∞ accelerators
particle accelerators
Spacelab

separated flow
UF *flow separation*
GS fluid flow
. viscous flow
. . boundary layer flow
. . . **separated flow**
. . . . boundary layer separation
RT cavitation flow
conical flow
Crocco–Lee theory
flow characteristics
flow distribution
forward facing steps
reattached flow
reversed flow
∞ separation
surface roughness effects
turbulence effects
vortex flaps

∞ **separation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *segregation*
RT adsorption
aeration
agglomeration
agitation
beneficiation
boundary layer separation
breaking
centrifuging
chemical fractionation
chipping
classifiers
cleaning
coagulation
coalescing
Coanda effect
colloids
concentrating
condensing
crystallization
cutting
debonding (materials)
decontamination
degassing
dehumidification
dehydration
deionization
delaminating
demineralizing
deoxygenation
deposition
descaling
desorption
dialysis
diffusion
dispersing
dissolving
distillation
diverters
∞ division
drying
electrodialysis
electrostatic precipitators
elimination
elution
evaporation
exchanging
exclusion
external store separation
extraction
filtration
flaking
flashing (vaporizing)
flotation
flushing
foaming
fractionation
fracturing
homogenizing
ion exchanging
ion extraction
ion stripping
isolation
leaching
materials recovery
melting
mixing
osmosis
percolation
phase separation (materials)
polarization (charge separation)
precipitation (chemistry)
purging
purification
radiochemical separation
recrystallization
refining
removal
scrapers
separated flow
separators
settling
shaking
shearing
size separation
slicing
solvent extraction
sorption
spacing
splitting
spreading
stage separation
stripping (distillation)
sublimation
swirling
thermal diffusion
thermophoresis
tumbling motion
vaporizing
venting
washing
zone melting

separators
UF *battery separators*
GS **separators**
. classifiers
. . sizing screens
. . thickeners (equipment)
. dividers
. drying apparatus
. . desiccators
. dust collectors
. evaporators
. fluid filters
. . air filters
. precipitators
. . electrostatic precipitators
. sieves
. spirals (concentrators)
. stills
RT centrifuges
cleaners
columns (process engineering)
concentrating
concentrators
condensers (liquefiers)
curtains
∞ diffusers
diverters
∞ filters
floats
fluidized bed processors
furnaces
ion exchange membrane electrolytes
mixers
∞ separation

shakers
spacers
traps
vaporizers
washers (cleaners)
washers (spacers)
windows (apertures)

septum
RT mediastinum
membranes
∞ partitions

sequencing
RT consecutive events
coordination
critical path method
interruption
∞ operations
operations research
packet switching
Petri nets
planning
priorities
ranking
scheduling
sequential control
switching
switching theory
turnaround (STS)

sequential analysis
GS statistical analysis
. **sequential analysis**
RT quality control
sampling
sorting algorithms
temporal logic

sequential computers
GS data processing equipment
. computers
. . digital computers
. . . **sequential computers**

sequential control
DEF Control by completion of a series of one or more events.
GS automatic control
. **sequential control**
RT accuracy
computer programming
consecutive events
∞ control
data flow analysis
numerical control
sequencing

Serbska Republic
(added June 1996)
GS nations
. **Serbska Republic**
RT Bosnia and Herzegovina
Europe
Yugoslavia

sergeant missiles
GS missiles
. surface to surface missiles
. . **sergeant missiles**
RT Juno 1 launch vehicle
Juno 2 launch vehicle
Jupiter C rocket vehicle
Little Joe 2 launch vehicle
solid propellant rocket engines

sergenium
GS chemical elements
. actinide series
. . transuranium elements
. . . **sergenium**
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . **sergenium**
metals
. actinide series
. . transuranium elements
. . . **sergenium**

series (mathematics)
GS analysis (mathematics)
. calculus
. . **series (mathematics)**
. . . asymptotic series
. . . Campbell–Hausdorff series
. . . cosine series
. . . Fourier series
. . . Pade approximation
. . . power series
. . . . Taylor series
. . . . . MacLaurin series
. . . progressions
. . . Prony series
. . . sine series
. real variables
. . **series (mathematics)**
. . . asymptotic series
. . . Campbell–Hausdorff series
. . . cosine series
. . . Fourier series
. . . Pade approximation
. . . power series
. . . . Taylor series
. . . . . MacLaurin series
. . . progressions
. . . Prony series
. . . sine series
RT Abel function
Chebyshev approximation
divergence
form factors
Fourier–Bessel transformations
function space
functional analysis
Gibbs phenomenon
infinity
series expansion
sums

series expansion
DEF In mathematics, a divergent series of terms the sum of which is asymptotic or ascending.
GS expansion
. **series expansion**
RT asymptotic series
divergence
∞ mathematics
series (mathematics)

serotonin
GS amines
. tryptamines
. . **serotonin**
drugs
. vasoconstrictor drugs
. . **serotonin**
organic compounds
. **serotonin**

serpentine
GS minerals
. **serpentine**
RT asbestos
chromites
rocks
soils

serratia
GS microorganisms
. bacteria
. . **serratia**

SERT (rocket tests)
USE **space electric rocket tests**

SERT 1 spacecraft
RT electric propulsion
electric rocket engines
engine tests
space electric rocket tests
∞ spacecraft

SERT 2 spacecraft
RT electric propulsion
electric rocket engines
engine tests
space electric rocket tests
∞ spacecraft

serums
GS **serums**
. inoculum
RT antiserums
∞ fluids
proteins

service life
UF *machine life*
GS life (durability)
. **service life**
RT accelerated life tests
∞ equipment
fatigue life
maintenance
retirement for cause
systems health monitoring

service modules
GS modules
. **service modules**
spacecraft components
. **service modules**
RT Apollo spacecraft
command modules
spacecraft docking modules
spacecraft modules

services
GS **services**
. medical services
. meteorological services
RT ∞ food
government procurement
Internet resources
inventory management
logistics
logistics management
materials handling
personnel
procurement
procurement management
products
site selection
support systems
transportation
utilities

servoamplifiers
GS amplifiers
. **servoamplifiers**
control equipment
. **servoamplifiers**

controllers
. servomechanisms
. . **servoamplifiers**
RT **feedback amplifiers**
fly by tube control
servocontrol

servocontrol
UF *servostability control*
RT **aeroservoelasticity**
aircraft hydraulic systems
automatic control
∞ control
control moment gyroscopes
control theory
digital command systems
feedback control
hydraulic equipment
manipulators
manual control
off–on control
pneumatic equipment
proportional control
remote control
rocket engine control
servoamplifiers
servomechanisms
servomotors
stepping motors
turbojet engine control
visual control

servomechanisms
DEF Control systems incorporating feedback in which one or more of the system signals represent mechanical motion.
GS controllers
. **servomechanisms**
. . servoamplifiers
. . servomotors
RT active control
actuators
aircraft hydraulic systems
automatic control
automatic control valves
∞ automation
∞ control
control moment gyroscopes
electric motors
feedback control
hydraulic equipment
pneumatic equipment
radar equipment
remote control
robots
self alignment
servocontrol
stepping motors
tactile sensors (robotics)
torque sensors (robotics)

servomotors
UF *Magnasyn (trademark)*
Selsyns (trademark)
servos
GS controllers
. servomechanisms
. . **servomotors**
motors
. **servomotors**
RT actuators
amplidynes
automatic control
electric motors
heliostats
∞ rotating electrical machines
∞ sensors
servocontrol
slewing
synchronizers
torque motors

servos
USE **servomotors**

servostability control
USE **servocontrol**

SES
USE **surface effect ships**

SES (Shuttle)
USE **Shuttle Engineering Simulator**

set
SN (EXCLUDES SET THEORY)
GS mechanical properties
. **set**
RT deformation
shear properties

set theory
UF *subsets (mathematics)*
GS mathematical logic
. **set theory**
. . Borel sets
. . equivalence
. . threshold logic
RT Boolean algebra
branching (mathematics)
combinatorial analysis
∞ conjunction
Fibonacci numbers
fractals
fuzzy sets
fuzzy systems
graph theory
homotropy
hyperplanes
lattices (mathematics)
Lebesgue theorem
Orlicz space
permutations
∞ space
subdivisions
subgroups
∞ theories

SETI
USE **Project SETI**

∞ **setting**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT adjusting
coagulation
curing
hardening (materials)
polymerization
positioning
solidification

settling
RT accumulations
agglomeration
agitation
beneficiation
coagulation
coalescing
concentrating
crystallization
deposition
effluents
flocculating
flotation
particle motion
precipitation (chemistry)
∞ processing
∞ separation
size separation
Stokes law (fluid mechanics)
subsidence
water treatment

setups
RT machining
tooling

Severe Storms Observing Satellite
USE **StormSat satellite**

sewage
GS wastes
. **sewage**
RT activated sludge
effluents
environment effects
human wastes
liquid wastes
metabolic wastes
organic wastes (fuel conversion)
sewers
solid wastes
waste disposal
water treatment

sewage treatment
GS management
. waste management
. . waste treatment
. . . **sewage treatment**
RT aerobes
anaerobes
chemical sterilization
filtration
Modular Integrated Utility System
purification
sediments
sludge
∞ treatment
waste disposal

sewers
DEF Networks of pipelines for the transportation of metabolic and/or industrial wastes for disposal.
GS pipelines
. **sewers**
RT drainage
effluents
garbage
human wastes
metabolic wastes
sanitation
sewage
waste disposal
wastes

sewing
RT binding
∞ joining
needles
weaving

sex
RT ∞ drives
females
males
sex factor

sex factor
RT females
males
physiological factors
psychological factors

sex
sex glands

sex glands
GS anatomy
. genitourinary system
. . reproductive systems
. . . **sex glands**
. . . . gonads
. . . . . ovaries
. . . . . testes
. . . . prostate gland
. glands (anatomy)
. . **sex glands**
. . . gonads
. . . . ovaries
. . . . testes
. . . prostate gland
RT estrogens
reproduction (biology)
sex factor

sextants
DEF Double reflecting instruments for measuring angles, primarily altitudes of celestial bodies.
GS measuring instruments
. optical measuring instruments
. . **sextants**
optical equipment
. optical measuring instruments
. . **sextants**
RT navigation aids
position indicators
stadimeters
theodolites
transits

Seychelles
(added February 1988)
GS landforms
. islands
. . **Seychelles**
nations
. **Seychelles**
RT Africa
Indian Ocean

Seyfert galaxies
GS celestial bodies
. galaxies
. . active galaxies
. . . **Seyfert galaxies**
RT active galactic nuclei
blazars
galactic nuclei
infrared radiation
line spectra
luminous intensity
Markarian galaxies
spiral galaxies
stellar spectra
ultraviolet radiation

SFAR
USE **sound fixing and ranging**

sferics
USE **atmospherics**

SGEMP
USE **system generated electromagnetic pulses**

SGML
USE **document markup languages**

SGR (nuclear reactors)
USE **sodium graphite reactors**

SH waves
(added September 1988)
UF *horizontally polarized shear waves*
GS elastic waves
. S waves
. . **SH waves**
RT nondestructive tests
seismic waves
transverse waves
ultrasonic tests
∞ waves

SH-3 helicopter
UF *HSS-2 helicopter*
Sea King helicopter
Sikorsky HSS-2 helicopter
GS antisubmarine warfare aircraft
. **SH-3 helicopter**
Sikorsky aircraft
. **SH-3 helicopter**
transport aircraft
. **SH-3 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **SH-3 helicopter**
RT S-61 helicopter
SH-4 helicopter

SH-4 helicopter
GS antisubmarine warfare aircraft
. **SH-4 helicopter**
Sikorsky aircraft
. **SH-4 helicopter**
transport aircraft
. **SH-4 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **SH-4 helicopter**
RT S-61 helicopter
SH-3 helicopter

Shackleton bomber
GS attack aircraft
. bomber aircraft
. . **Shackleton bomber**
Hawker Siddeley aircraft
. **Shackleton bomber**
monoplanes
. **Shackleton bomber**

shades
RT louvers
shielding
∞ shutters

shadowgraph photography
DEF Photography in which steep density gradients in the flow about a body are made visible, the body itself being presented in silhouette. Used for shadowgraphs and spark shadowgraph photography.
UF *shadowgraphs*
spark shadowgraph photography
GS imagery
. photography
. . **shadowgraph photography**
. . . Schlieren photography
RT black and white photography
color photography
flow visualization
wind tunnel models

shadowgraphs
USE **shadowgraph photography**

shadows
DEF Darknesses in regions, caused by obstructions between the source of light and the regions.
GS **shadows**
. lunar shadow
. penumbras
RT cloud cover
clouds (meteorology)
darkness
illuminating
light (visible radiation)
night
self shadowing
umbras

shafts (machine elements)
UF *axles*
journals (shafts)
trunnions
GS **shafts (machine elements)**
. rotating shafts
. . turboshafts
RT axes of rotation
bearings
bushings
∞ journals
∞ loading
loads (forces)
mandrels
mechanical drives
packings (seals)
pintles
pivots
rotating cylinders
spindles
supports
torque
transmissions (machine elements)
vehicle wheels
wheels

shakers
RT classifiers
mixers
separators
shaking
sieves
sizing screens
vertical motion simulators
vibration simulators

shaking
GS **shaking**
. dithers
RT agitation
buffeting
dispersing
epilepsy
flapping
flutter
mixing
∞ separation
shakers
structural vibration
suspending (mixing)
swirling
vibration

shale oil
GS oils
. **shale oil**
RT fuel oils
fuels
gasoline
hydrocarbon fuels
kerogen

kerosene
lubricating oils
paraffins
retort processing

shales
DEF Fine grained detrital sedimentary rocks, formed by the consolidation (especially by compression) of clay, silt, or mud. They are characterized by finely laminated structures, which impart a fissility approximately parallel to the bedding, along which rocks break readily into thin layers and are commonly most conspicuous on weathered surfaces. They are characterized by an appreciable content of clay minerals and detrital quartz; thinly laminated or fissile claystones, siltstones, or mudstones.
GS rocks
. **sedimentary rocks**
. . **shales**
RT boreholes
clays
Earth resources
minerals
soils

shallow shell equations
RT end plates
∞ equations
pressure vessels
stress analysis

shallow shells
GS shells (structural forms)
. **shallow shells**
RT critical loading
shell stability
shell theory

shallow water
GS water
. **shallow water**
RT cnoidal waves
fisheries
oceanography
oceans
reefs
seas
shorelines
topography
water depth

shanks
USE **joints (junctions)**

Shannon information theory
USE **information theory**

Shannon–Wiener measure
RT entropy
information theory
random variables

shape control
DEF The control of large flexible platforms in orbit by means of actuators strategically located.
RT actuators
Columbus space station
∞ control
control theory
flexible spacecraft
large space structures
space platforms
spacecraft control

shape functions
(added July 1992)
GS functions (mathematics)
. **shape functions**
RT finite element method
polynomials
structural analysis

shape memory alloys
DEF Martensitic alloys (titanium–nickel) which exhibit shape recovery characteristics by stress-induced transformation and reorientation. Reverse transformation during heating restores the original grain structure of the high temperature phase.
GS alloys
. **shape memory alloys**
. . nitinol alloys
RT microstructure
nickel alloys
phase transformations
plastic memory
stress–strain diagrams
temperature effects
titanium alloys
transition metals

shaped charges
DEF An explosive device configured so that its energy can be controlled in one direction.
GS explosive devices
. **shaped charges**
RT ammunition
bombs (ordnance)
explosive forming
explosives
projectiles
torpedoes
warheads
weapons

shapers
GS tools
. machine tools
. . **shapers**
RT grinding machines
milling machines

shapes
UF *curved surfaces*
form
GS **shapes**
. convexity
. ellipticity
. flatness
. line shape
. ogee shape
. rosette shapes
. T shape
RT asymmetry
concavity
contour sensors
contours
corners
∞ cross sections
curvature
curved panels
geoids
geometry
morphology
oblate spheroids
planforms
∞ profiles
profilometers
prolateness
∞ surface geometry
symmetry
topology

sharks
GS animals
. vertebrates
. . fishes
. . . **sharks**

sharp leading edges
GS edges
. leading edges
. . **sharp leading edges**
RT airfoils
forebodies
trailing edges

∞ **sharpness**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT clarity
contrast
precision
slender bodies

shatter cones
DEF Distinctively striated conical rock fragments along which fracturing has occurred, ranging in length from less than a centimeter to several meters, and generally found in nested or composite groups in rocks of cryptoexplosion structures and believed to be formed by shock waves generated by meteorite impact.
GS cones
. **shatter cones**
rocks
. **shatter cones**
RT carbonaceous rocks
cometary collisions
crustal fractures
formations
geology
geomorphology
meteorite collisions
meteorite craters
sedimentary rocks
shock loads
striation
structural properties (geology)

shattering
USE **fragmentation**

Shawnee helicopter
USE **CH–21 helicopter**

∞ **shear**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT dilatational waves
shearing
shears

shear creep
GS mechanical properties
. creep properties
. . **shear creep**
RT plastic deformation
tensile creep

shear disturbances
USE **S waves**

shear fatigue
USE **shear stress**

shear flow
GS fluid flow
. **shear flow**
RT coaxial flow
core flow
creep properties
∞ flow

grazing flow
Kolmogorov theory
Krook equation
mixing length flow theory
plastic flow
Richardson number
stratified flow

shear layers
UF *Chapman shear layer*
RT boundary layers
Earth ionosphere
∞ layers
mixing layers (fluids)
riblets
shock layers
shock wave control
∞ transition layers

shear properties
GS mechanical properties
. **shear properties**
. . shear strength
RT creep properties
ductility
fatigue (materials)
Hookes law
hysteresis
impact strength
modulus of elasticity
∞ properties
resilience
set
stress relaxation
stresses
stress–strain diagrams
temperature inversions
toughness

shear strain
DEF The tangent of the angular change, due to force, between two lines originally perpendicular to each other through a point in a body.
RT mechanical properties
structural strain
torsional vibration

shear strength
DEF The maximum shear stress which a material is capable of sustaining. Shear strength is calculated from the maximum load during a shear or torsion test and is based on the original dimensions of the cross section of the specimen.
GS mechanical properties
. shear properties
. . **shear strength**
RT compressive strength
fiber strength
high strength
interfacial energy
∞ strength
tensile strength

shear stress
DEF The stress component tangential to the plane on which the forces act. Used for shear fatigue and shearing stress.
UF *shear fatigue*
shearing stress
GS stresses
. **shear stress**
. . torsional stress
RT interlaminar stress
mechanical properties
shearography
transverse loads

shear waves
USE **S waves**

shearing
GS cutting
. **shearing**
RT blanking (cutting)
cold working
failure
failure modes
hot working
loads (forces)
metal cutting
metal working
∞ separation
∞ shear
shears
stamping
structural strain

shearing stress
USE **shear stress**

shearography
(added February 1996)
DEF An interferomic method that provides whole field observation of derivatives of small surface displacement and hence, strain.
GS interferometry
. **shearography**
RT displacement measurement
nondestructive tests
shear stress
strain measurement
stress measurement

shears
GS cutters
. **shears**
tools
. **shears**
RT machine tools
saws
∞ shear
shearing

sheaths
GS **sheaths**
. ion sheaths
. plasma sheaths
RT ∞ casing
encapsulating
fairings
jackets
linings
protectors
roofs
walls

shedding
RT ejection
melting
peeling
vortex shedding

sheds
RT shelters

sheep
GS animals
. vertebrates
. . mammals
. . . **sheep**
RT livestock
wool

sheet metal
USE **metal sheets**

sheet molding compounds
(added July 1993)
DEF Resin matrix of polymer matrix fiber composites formed into sheets and used as molding materials for structures.
GS molding materials
. **sheet molding compounds**
RT composite materials
composite structures
fiber composites
graphite–epoxy composites
molds
plastics
polymer matrix composites
resin matrix composites
∞ sheets

∞ **sheets**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT coatings
current sheets
elastic sheets
fabrics
flat plates
laminates
membrane structures
membranes
metal foils
metal sheets
multilayer insulation
neutral sheets
panels
papers
polymeric films
sheet molding compounds
thick plates
thin plates
vortex sheets
vortex streets
webs (sheets)

shell anodes
GS electrodes
. anodes
. . **shell anodes**
RT heat measurement

shell galaxies
(added March 1991)
GS celestial bodies
. galaxies
. . **shell galaxies**
RT elliptical galaxies
galactic structure
interacting galaxies

shell stability
GS mechanical properties
. dimensional stability
. . structural stability
. . . **shell stability**
stability
. static stability
. . dimensional stability
. . . structural stability
. . . . **shell stability**
RT buckling
fluid filled shells
liquid filled shells
orthotropic shells
plastic shells
reinforced shells
shallow shells

shell stars
(added November 1988)
GS celestial bodies
. stars
. . early stars
. . . hot stars
. . . . B stars
. . . . . **shell stars**
. . peculiar stars
. . . **shell stars**
RT stellar envelopes

shell theory
RT perforated shells
self consistent fields
shallow shells
∞ theories

shellfish
DEF Aquatic invertebrate animals having shells.
RT coastal water
marine biology
marine environments
marine resources
molluscs

shells (structural forms)
GS **shells (structural forms)**
. anisotropic shells
. circular shells
. conical shells
. corrugated shells
. cylindrical shells
. domes (structural forms)
. . radomes
. elastic shells
. fluid filled shells
. . liquid filled shells
. hemispherical shells
. metal shells
. orthotropic shells
. perforated shells
. plastic shells
. reinforced shells
. shallow shells
. spherical shells
. . spherical caps
. thin walled shells
. toroidal shells
RT aircraft structures
arches
bays (structural units)
∞ capsules
coverings
cowlings
enclosures
fairings
housings
hulls (structures)
isotensoid structures
membrane structures
membranes
monocoque structures
nacelles
pressure vessel design
protuberances
rocket engine cases
skin (structural member)
walls

shelters
GS **shelters**
. lunar shelters
RT buildings
civil defense
environmental engineering
habitability
sheds
Starsite program
survival

∞ **shelves**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT bedrock
cases (containers)
cliffs
continental shelves
racks (frames)
reefs

Shenandoah Valley (VA)
GS valleys
. **Shenandoah Valley (VA)**
RT river basins
Virginia

shergottites
(added September 1991)
DEF Achondritic stony meteorites composed mainly of pigeonite and maskelynite.
GS celestial bodies
. meteorites
. . stony meteorites
. . . achondrites
. . . . **shergottites**
RT chassignites
nakhlites

shielding
DEF The arrangement of shields used for any particular circumstance; the use of shields.
GS **shielding**
. electromagnetic shielding
. . radio frequency shielding
. electrostatic shielding
. heat shielding
. . reentry shielding
. . reusable heat shielding
. magnetic shielding
. radiation shielding
. . solar radiation shielding
. spacecraft shielding
RT ablative nose cones
absorbers (materials)
armor
attenuation
attenuators
baffles
∞ barriers
blast deflectors
blinds
deflectors
diverters
enclosures
flame deflectors
guards (shields)
housings
linings
louvers
manipulators
panels
protection
protectors
safety devices
∞ screens
shades
suppressors
windows (apertures)
windshields

shields (geology)
USE **bedrock**

∞ **shift**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT exchanging
frequency shift
phase shift
shift registers
transferring

shift registers
GS computer components
. **shift registers**
RT computer storage devices
delay lines (computer storage)
digital techniques
registers (computers)
∞ shift

shifting equilibrium flow
GS fluid flow
. gas flow
. . equilibrium flow
. . . **shifting equilibrium flow**
RT frozen equilibrium flow

Shillelagh missiles
GS missiles
. surface to surface missiles
. . antitank missiles
. . . **Shillelagh missiles**

ship hulls
GS hulls (structures)
. **ship hulls**
RT hydrodynamic coefficients
hydrodynamics
ships
structural design
submarines

ship terminals
GS terminal facilities
. **ship terminals**
RT artificial harbors
deepwater terminals
harbors
Marots (ESA)
offshore docking
tanker terminals
∞ terminals
wharves

ship to shore communication
DEF Communication between a ship at sea and a shore station.
GS telecommunication
. communication
. . **ship to shore communication**
RT data transmission
radio communication
ships
telemetry

ships
GS water vehicles
. **ships**
. . Advanced Range Instrumentation Ship
. . aircraft carriers
. . cargo ships
. . . Savannah nuclear ship
. . . tanker ships
. . nuclear powered ships
. . . Savannah nuclear ship
. . satellite communications ships
. . submarines
. . . ballistic missile submarines
. . . guided missile submarines

. . . trident submarine
. . surface effect ships
. . SWATH (ship)
RT amphibious vehicles
antiship missiles
antiship warfare
boats
harbors
hydrofoil craft
hydrofoils
keels
marine transportation
∞ military vehicles
navy
ocean data acquisitions systems
propellers
research vehicles
ship hulls
ship to shore communication
shipyards
surface navigation
surface vehicles
∞ transport vehicles
transportation energy
underwater vehicles
∞ vessels

shipyards
RT cargo ships
construction
enclosures
industrial areas
industries
logistics
maintenance
oceanography
∞ ports
ships
tanker ships
water vehicles

Shiva laser system
DEF High energy multi-arm solid state (Nd doped ED-2 glass) infrared laser system used for laser driven fusion experiments.
GS stimulated emission devices
. lasers
. . high power lasers
. . . **Shiva laser system**
RT coherent light
laser fusion
laser outputs
Nova Laser System
∞ systems

shivering
GS **shivering**
. dithers
RT body temperature

shoals
GS water
. **shoals**
RT beaches
lakes
oceanography
oceans
reefs
rivers
seas
water depth

∞ **shock**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT convulsions
mechanical shock
shock (physiology)
shock resistance
thermal shock

shock (physiology)
DEF Clinical manifestations of circulatory insufficiency, including hypotension, weak pulse, tachycardia, pallor, and diminished urinary output.
RT human reactions
human tolerances
physiological effects
physiology
∞ shock

shock absorbers
DEF Devices for the dissipation of energy used to modify the response of a mechanical system to applied shock.
RT ∞ absorbers
absorbers (equipment)
cushions
damping
energy absorption
hydraulic equipment
impact
impact acceleration
isolators
landing gear
mechanical shock
pneumatic equipment
silencers
springs (elastic)
suspension systems (vehicles)
vibration damping
vibration isolators

shock diffusers
USE **diffusers**
shock wave attenuation

shock discontinuity
GS discontinuity
. **shock discontinuity**
RT density distribution
wave fronts

shock fronts
DEF Shock waves regarded as the forward surfaces of fluid regions having characteristics different from those of the region ahead of the wave. The front sides of shock waves.
GS wave fronts
. **shock fronts**
RT ∞ fronts
magnetosheath
wave propagation
wave scattering

shock heating
GS heating
. kinetic heating
. . aerodynamic heating
. . . **shock heating**
. transient heating
. . **shock heating**
RT magnetohydrodynamic shear heating
plasma heating

shock layers
RT ∞ layers
normal shock waves
oblique shock waves
shear layers
stress waves
∞ transition layers

shock loads
GS loads (forces)
. dynamic loads
. . transient loads
. . . **shock loads**
. . . . blast loads
RT aerodynamic loads
axial compression loads
compression loads
contact loads
crustal fractures
impact loads
landing loads
shatter cones
structural design criteria

shock measuring instruments
GS measuring instruments
. **shock measuring instruments**
RT accelerometers
pressure gages
seismographs
strain gages

shock resistance
GS **shock resistance**
. impact resistance
RT earthquake resistance
high acceleration
impact
mechanical properties
mechanical shock
propellant sensitivity
∞ resistance
sensitivity
∞ shock
thermal shock
vibration

shock simulators
GS simulators
. **shock simulators**
RT vertical motion simulators
vibration simulators

shock spectra
DEF Plots of the maximum acceleration experienced by single degree of freedom systems as a function of their own natural frequency in response to applied shocks.
GS spectra
. **shock spectra**
RT dynamic structural analysis
energy spectra
mechanical shock
noise spectra
stroking tests
structural design
structural vibration

shock tests
RT drop tests
impact tests
load tests
railroad humping tests
∞ tests
vibration tests

shock tubes
DEF Relatively long tubes or pipes in which very brief high speed gas flows are produced by the sudden release of gas at very high pressure into low pressure portions of the tubes; the high speed flows move into the region of low pressure behind shock waves.
GS shock wave generators
. **shock tubes**
. . magnetic annular shock tubes
. . shock tunnels
RT gas temperature
hotshot wind tunnels

hypersonic flow
hypersonic wind tunnels
hypervelocity wind tunnels
low density research
low density wind tunnels
magnetic pistons
test facilities
tube lasers
∞ tubes

shock tunnels
DEF Shock tubes used as wind tunnels.
GS shock wave generators
. shock tubes
. . **shock tunnels**
test facilities
. wind tunnels
. . hypersonic wind tunnels
. . . **shock tunnels**
. . hypervelocity wind tunnels
. . . **shock tunnels**
RT cascade wind tunnels
hotshot wind tunnels
hypersonic flow
low density research
low density wind tunnels
supersonic wind tunnels

shock wave attenuation
UF *shock diffusers*
GS attenuation
. wave attenuation
. . acoustic attenuation
. . . **shock wave attenuation**
RT atmospheric attenuation
noise reduction
wave propagation

shock wave control
RT ∞ control
secondary injection
shear layers

shock wave generators
GS **shock wave generators**
. shock tubes
. . magnetic annular shock tubes
. . shock tunnels
RT ∞ generators
magnetic pistons
pressure sensors
pulse generators
wave generation

shock wave interaction
GS wave interaction
. **shock wave interaction**
RT interactional aerodynamics
∞ interactions
propagation modes
scattering
wave degradation

shock wave luminescence
GS emission
. light emission
. . luminescence
. . . **shock wave luminescence**
RT low density research
wave interaction

shock wave profiles
RT Krook equation
pressure distribution
∞ profiles
velocity distribution
wave interaction

shock wave propagation
GS transmission
. wave propagation
. . **shock wave propagation**
RT atmospheric attenuation
Burger equation
Crocco method
high temperature gases
nonequilibrium radiation
Rankine–Hugoniot relation
secondary injection
sound propagation
two fluid models
wave attenuation
wave interaction

shock waves
DEF Surfaces or sheets of discontinuity (i.e., abrupt changes in conditions) set up in supersonic fields of flow, through which the fluids undergo a finite decrease in velocity accompanied by a marked increase in pressure, density, temperature, and entropy, as occurs, e.g., in supersonic flows about bodies. Used for bow shock waves.
UF *bow shock waves*
GS elastic waves
. **shock waves**
. . detonation waves
. . Mach cones
. . normal shock waves
. . oblique shock waves
. . Riemann waves
. . sonic booms
RT adiabatic equations
aerodynamic noise
blast loads
∞ blasts
bow waves
Burnett equations
caustic lines
crustal fractures
detonation
earthquake damage
earthquake resistance
earthquake resistant structures
earthquakes
electrostatic waves
exploding wires
explosions
gas temperature
geodynamics
Hugoniot equation of state
hypersonic flow
hypersonic shock
hypersonic wakes
impact
implosions
longitudinal waves
Mach number
Mach reflection
magnetohydrodynamic waves
mechanical shock
molecular relaxation
noise (sound)
novae
plane waves
planetary quakes
plasma waves
plumes
pressure pulses
seismic waves
sound pressure
sound waves
stress waves
supersonic flow
∞ transition layers
transonic flow
tsunami waves
underwater acoustics
underwater communication
∞ waves
wedge flow
Whitham rule

Shoemaker–Levy 9 comet
(added June 1994)
GS celestial bodies
. comets
. . **Shoemaker–Levy 9 comet**
RT cometary collisions
Jupiter (planet)

shoes
GS clothing
. **shoes**
RT boots (footwear)
leather
protective clothing
socks

Shooting Star aircraft
USE **T–33 aircraft**

shops
RT maintenance

Shoran
DEF A precision electronic position fixing system using a pulse transmitter and receiver and two transponder beacons at fixed points. Used for short range navigation.
UF *short range navigation*
GS navigation
. radio navigation
. . hyperbolic navigation
. . . **Shoran**
RT air navigation
Decca navigation
distance measuring equipment
navigation aids
solar compasses

shorelines
RT beaches
coastal water
coasts
lakes
oceanography
oceans
rivers
shallow water
tidal flats
wetlands

Short Belfast C MK–1 aircraft
USE **SC–5 aircraft**

short circuit currents
DEF The steady value of the input alternating currents that flow when the output direct current terminals are short-circuited and rated line alternating voltage is applied to the line terminals.
GS electric current
. **short circuit currents**
RT open circuit voltage
photovoltaic cells
short circuits
solar cells
volt–ampere characteristics

short circuits
DEF An abnormal connection of relatively low resistance between two points on a circuit. The

result is a flow of excess (often damaging) current between these points.
GS electrical faults
. **short circuits**
RT circuits
electric arcs
failure
jumpers
short circuit currents
sneak circuit analysis
system failures

short cracks
GS fractures (materials)
. cracks
. . **short cracks**
RT crack geometry
crack initiation
crack propagation
fatigue life
fracture mechanics
metal fatigue

short haul aircraft
GS transport aircraft
. **short haul aircraft**
. . C-8A augmentor wing aircraft
. . Cessna 402B aircraft
. . Mercure aircraft
RT air transportation
∞ aircraft
aircraft design
airline operations
passenger aircraft
V/STOL aircraft

short range ballistic missiles
GS missiles
. ballistic missiles
. . **short range ballistic missiles**
. surface to surface missiles
. . **short range ballistic missiles**
RT field army ballistic missiles
intermediate range ballistic missiles

short range navigation
USE **Shoran**

Short SC-1 aircraft
USE **SC-1 aircraft**

Short SC-5 aircraft
USE **SC-5 aircraft**

Short SC-7 aircraft
USE **SC-7 aircraft**

short takeoff & vertical landing aircraft
USE **STOVL aircraft**

short takeoff aircraft
UF *STOL aircraft*
GS V/STOL aircraft
. **short takeoff aircraft**
. . Aladin 2 aircraft
. . Breguet 940 aircraft
. . Breguet 941 aircraft
. . C-8A augmentor wing aircraft
. . C-15 aircraft
. . C-123 aircraft
. . DHC 4 aircraft
. . DHC 5 aircraft
. . Questol aircraft
. . U-10 aircraft
RT ∞ aircraft
circulation control airfoils
compound helicopters
externally blown flaps
fan in wing aircraft
helicopters
JATO engines
jet aircraft
jet flaps
lift fans
lifting rotors
∞ military aircraft
powered lift aircraft
rotary wing aircraft
Siebel aircraft
STOVL aircraft
∞ subsonic aircraft
takeoff runs
tilt wing aircraft
vertical takeoff aircraft
∞ winged vehicles

short wave radiation
SN (RADIO WAVES)
GS electromagnetic radiation
. radio waves
. . **short wave radiation**
. . . microwaves
. . . . centimeter waves
. . . . decimeter waves
. . . . microwave emission
. . . . millimeter waves
. . . submillimeter waves
RT far infrared radiation
high frequencies
long wave radiation
monochromatic radiation
∞ radiation

short wave radio transmission
GS transmission
. electromagnetic wave transmission
. . radio transmission
. . . **short wave radio transmission**
. signal transmission
. . radio transmission
. . . **short wave radio transmission**
RT high frequencies
wave propagation

shortening
USE **reduction**

∞ **shot**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ammunition
launching
orbital shots
pellets
shot noise
shot peening

shot noise
DEF Quantum noise caused by electric current fluctuations attributable to the discrete nature of charge carriers.
GS electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . **shot noise**
RT Barritt diodes
∞ shot
thermal noise

shot peening
GS hardening (materials)
. **shot peening**
metal finishing
. peening
. . **shot peening**
RT cold working
descaling
fatigue (materials)
metal working
∞ shot
strain hardening
surface finishing
work hardening

shoulders
RT joints (anatomy)
scapula

∞ **showers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cosmic ray showers
flood predictions
meteoroid showers
rain
rain forests
rainstorms

shrapnel
RT fragmentation
fragments
projectiles
weapons

shredding
GS comminution
. **shredding**
RT composting
cutting
tearing

Shrike missile
GS missiles
. air to surface missiles
. . **Shrike missile**
RT solid propellant rocket engines

shrinkage
RT casting
contraction
growth
∞ reduction
sintering
temperature inversions
warpage

shrouded bodies
USE **shrouds**

shrouded nozzles
RT annular nozzles
nozzle geometry
nozzle walls
∞ nozzles

shrouded propellers
UF *ducted propellers*
GS propellers
. **shrouded propellers**
RT ducted fans
ring wings
thrust augmentation
XV-11A aircraft

shrouded turbines
GS turbomachinery
. turbines
. . **shrouded turbines**

shrouds
UF *shrouded bodies*
RT coverings

ducted bodies
rigging

shunts
USE **bypasses**
circuits

shutdowns
DEF The processes of decreasing engine thrusts to zero.
RT **deactivation**
engines
∞ **SCRAM**

∞ **shutters**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT **blinds**
camera shutters
louvers
shades

Shuttle Avionics Integration Laboratory
USE **SAIL project**

Shuttle Boosters
USE **Space Shuttle Boosters**

Shuttle Derived Vehicles
DEF New configuration resulting from the production and operation of the Space Shuttle. Used for SDV
UF *SDV*
RT Advanced Launch System (STS)
manned spacecraft
Space Shuttle orbiters
space shuttles
∞ **spacecraft**
spacecraft design

Shuttle Engineering Simulator
DEF Training equipment for crew members in mission operation procedures including various approach maneuvers, braking, final approach, etc.
UF *SES (Shuttle)*
GS simulators
. **Shuttle Engineering Simulator**
RT **space shuttles**

shuttle glow
USE **spacecraft glow**

Shuttle Imaging Radar
UF *Earth resources shuttle imaging radar*
SIR-A
SIR-B
SIR-C
SIR-D
GS **radar**
. Doppler radar
. . pulse Doppler radar
. . . **Shuttle Imaging Radar**
. imaging radar
. . **Shuttle Imaging Radar**
. pulse radar
. . pulse Doppler radar
. . . **Shuttle Imaging Radar**
. space based radar
. . **Shuttle Imaging Radar**
. synthetic aperture radar
. . **Shuttle Imaging Radar**
RT Earth observations (from space)
radar geology
radar imagery
remote sensing
Space Shuttle payloads
synthetic arrays

Shuttle Mission Simulator
UF *SMS (Shuttle)*
GS simulators
. **Shuttle Mission Simulator**

Shuttle Orbiters
USE **Space Shuttle orbiters**

Shuttle pallet satellites
DEF Reusable pallet type structures designed to be shuttle launched which will act as building blocks for larger platforms. Used for SPAS (ESA platforms).
UF *SPAS (ESA platforms)*
GS artificial satellites
. **Shuttle pallet satellites**
RT space shuttles

SI
USE **International System of Units**

sialon
DEF Any composition containing silicon, aluminum, oxygen, and nitrogen and usually produced by the high-temperature reactions among the ingredients.
GS mixtures
. **sialon**
RT aluminum
ceramics
high temperature
nitrogen
oxygen
reaction bonding
refractory materials
silicon nitrides
sintering

SIAM missiles
UF *self initiated antiaircraft missiles*
GS missiles
. antiaircraft missiles
. . **SIAM missiles**
RT air to air missiles
antimissile missiles

Siberia
RT Arctic regions
Asia
U.S.S.R.

SIC (coefficient)
USE **structural influence coefficients**

Sicily
GS landforms
. islands
. . **Sicily**
RT Italy
Mediterranean Sea

sicknesses
GS **sicknesses**
. altitude sickness
. decompression sickness
. motion sickness

SID (ionospheric disturbances)
USE **sudden ionospheric disturbances**

side inlets
GS intake systems
. **side inlets**
RT air intakes
bypass ratio
hypersonic inlets
inlet airframe configurations
nose inlets
scoops
supersonic inlets
∞ water intakes

side-looking radar
GS radar
. synthetic aperture radar
. . **side-looking radar**
RT airborne radar
change detection
imaging radar
radar imagery
radar scanning
search radar

sidebands
RT ∞ bands
double sideband transmission
selective fading
single sideband transmission

sidelobe reduction
GS attenuation
. **sidelobe reduction**
RT horn antennas
radar antennas
radar attenuation
radar reception
radar reflectors
radar resolution
∞ reduction
sidelobes

sidelobes
GS distribution (property)
. radiation distribution
. . antenna radiation patterns
. . . **sidelobes**
RT antenna design
∞ lobes
near fields
sidelobe reduction

sidereal time
DEF Time based upon the rotation of the Earth relative to the vernal equinox.
GS time
. **sidereal time**
RT astronomy
Earth rotation
stellar motions
time measurement
units of measurement

siderite meteorites
USE **iron meteorites**

siderites
DEF A spathic iron ore; an iron carbonate.
GS carbon compounds
. carbonates
. . **siderites**
iron compounds
. **siderites**
minerals
. **siderites**

sides
RT **edges**
geometry
rims
walls

sideslip
GS maneuvers
. **sideslip**
RT roll
skidding
∞ slip
spacecraft motion

yaw

sidewash
USE **backwash**

Sidewinder missiles
GS missiles
. air to air missiles
. . **Sidewinder missiles**
. antiaircraft missiles
. . **Sidewinder missiles**

Siebel aircraft
RT∞ aircraft
short takeoff aircraft

Siemens 2002 computer
GS data processing equipment
. computers
. . **Siemens 2002 computer**

Sierra Leone
GS nations
. **Sierra Leone**
RT Africa

Sierra Nevada Mountains (CA)
GS landforms
. mountains
. . **Sierra Nevada Mountains (CA)**
RT California

sieves
GS separators
. **sieves**
RT fluid filters
shakers
sizing screens
wire cloth

sight
USE **visual perception**

SIGMA 5 computer
GS data processing equipment
. computers
. . analog computers
. . . **SIGMA 5 computer**
. . digital computers
. . . **SIGMA 5 computer**

SIGMA 7
GS manned spacecraft
. Mercury spacecraft
. . **SIGMA 7**
reentry vehicles
. recoverable spacecraft
. . Mercury spacecraft
. . . **SIGMA 7**
soft landing spacecraft
. Mercury spacecraft
. . **SIGMA 7**
space capsules
. Mercury spacecraft
. . **SIGMA 7**
RT Mercury MA-8 flight

SIGMA 9 computer
GS data processing equipment
. computers
. . digital computers
. . . SIGMA computers
. . . . **SIGMA 9 computer**

SIGMA computers
GS data processing equipment
. computers
. . digital computers
. . . **SIGMA computers**
. . . . SIGMA 9 computer

Sigma Orionis
GS celestial bodies
. stars
. . double stars
. . . binary stars
. . . . **Sigma Orionis**
. . early stars
. . . hot stars
. . . . B stars
. . . . . **Sigma Orionis**
. . peculiar stars
. . . **Sigma Orionis**
RT Orion constellation
stellar systems

sigma-mesons
GS particles
. elementary particles
. . bosons
. . . mesons
. . . . vector mesons
. . . . . **sigma-mesons**
. . fermions
. . . baryons
. . . . **sigma-mesons**
. . hadrons
. . . baryons
. . . . **sigma-mesons**
. . . mesons
. . . . vector mesons
. . . . . **sigma-mesons**
. nuclear particles
. . bosons
. . . mesons
. . . . vector mesons
. . . . . **sigma-mesons**
RT charged particles
eta-mesons

signal analysis
GS data processing
. **signal analysis**
. . cepstral analysis
RT∞ analyzing
digital radar systems
frequency analyzers
phase deviation
signal measurement
spectrum analysis
wavelet analysis

signal analyzers
GS measuring instruments
. analyzers
. . **signal analyzers**
RT analog computers
autodynes

signal detection
GS detection
. **signal detection**
. . correlation detection
RT autodynes
∞ detectors
discrimination
dynamic range
phase detectors
preamplifiers
radar detection
signal measurement
sound transducers
telecommunication

signal detectors
UF *signal discriminators*
RT autodynes
∞ detectors
discrimination
microwave sensors
preamplifiers
signal measurement
sound transducers
telecommunication

signal discriminators
USE **signal detectors**

signal distortion
GS distortion
. **signal distortion**
RT intersymbolic interference
radio signals
scrambling (communication)

signal encoding
GS coding
. **signal encoding**
. . amplitude modulation
. . . quadrature amplitude modulation
. . frequency modulation
. . . feedback frequency modulation
. . . FM/PM (modulation)
. . . frequency shift keying
. . . pulse frequency modulation
. . phase modulation
. . . FM/PM (modulation)
. . . phase shift keying
. . . . binary phase shift keying
. . . . quadrature phase shift keying
. . pulse modulation
. . . pulse amplitude modulation
. . . pulse code modulation
. . . . delta modulation
. . . . differential pulse code modulation
. . . pulse frequency modulation
. . . pulse time modulation
. . . . pulse duration modulation
. . . . pulse position modulation
. . trellis coding
RT concatenated codes
digital to analog converters
pulse frequency modulation telemetry
redundancy encoding
Read-Solomon codes
scrambling (communication)
telecommunication
transmitters
video compression
Viterbi decoders
voice data processing
wavelet analysis

signal fadeout
USE **signal fading**

signal fading
UF *signal fadeout*
GS fading
. **signal fading**
. . selective fading
RT acoustic instability
atmospheric scattering
attenuation
diffraction patterns
electromagnetic absorption
ground effect (communications)
radio frequency interference
radio scattering
reception diversity
signal measurement
smear
sound intensity

signal fading rate
GS rates (per time)

. signal fading rate
RT fading
selective fading
sound intensity

signal flow graphs
RT duality principle
∞ flow graphs
network analysis
Richards theorem
sneak circuit analysis

signal generators
DEF Shielded sources of voltage or power, the output level and frequency of which are calibrated, and usually variable over a range.
GS **signal generators**
. frequency synthesizers
. function generators
RT circuits
∞ generators
Hall generators
oscillators
sirens
solid state devices
sound generators
subharmonic generators
voltage generators

signal measurement
UF *electronic signal measurement*
RT electromagnetic measurement
ionospheric propagation
∞ measurement
signal analysis
signal detection
signal detectors
signal fading
signal processing
signal to noise ratios

signal mixing
GS mixing
. signal mixing
RT auditory signals
error signals
four-wave mixing
magnetic signals
radio signals

signal processing
GS data processing
. signal processing
RT audio signals
companding
direction finding
discrete cosine transform
equalizers (circuits)
interference immunity
maximum entropy method
message processing
multisensor fusion
onboard data processing
∞ processing
signal measurement
smoke detectors
surface acoustic wave devices
telemetry
VHSIC (circuits)
video signals
Viterbi decoders
wavelet analysis

signal reception
GS signal reception
. homodyne reception
. radar reception
. radio reception
. television reception
RT preamplifiers
∞ receiving
sentences
transmission rate (communications)
vocoders

signal reflection
GS echoes
. signal reflection
reflection
. signal reflection
RT cepstral analysis
spread reflection
transmission
wave reflection

signal stabilization
GS stabilization
. signal stabilization
RT frequency control
transmission circuits

signal to noise ratios
DEF Ratios which measure the comprehensibility of a data source or transmission link, usually expressed as the root mean square signal amplitude divided by the root mean square noise amplitude.
GS ratios
. signal to noise ratios
RT amplitude distribution analysis
attenuation
background noise
bit error rate
carrier to noise ratios
channel noise
communication theory
companding
correlation detection
dark current
dynamic range
electromagnetic interference
electromagnetic noise
false alarms
image contrast
image enhancement
interference immunity
low noise
matched filters
maximum entropy method
∞ noise
noise propagation
noise spectra
noise threshold
random noise
random signals
signal measurement
∞ signals
white noise

signal transmission
GS transmission
. signal transmission
. . data transmission
. . . automatic picture transmission
. . . multiple access
. . . . Aloha system
. . . . code division multiple access
. . . . demand assignment multiple access
. . . . frequency division multiple access
. . . . time division multiple access
. . . packet transmission
. . . . Aloha system
. . . single channel per carrier transmission
. . microwave attenuation
. . radar transmission
. . radio transmission
. . . double sideband transmission
. . . ionospheric propagation
. . . . ionospheric F-scatter propagation
. . . microwave transmission
. . . multipath transmission
. . . short wave radio transmission
. . . single sideband transmission
. . . spread spectrum transmission
. . . transequatorial propagation
. . . transhorizon radio propagation
. . satellite transmission
. . telemetry
. . . biotelemetry
. . . P.A.C.M. telemetry
. . . PCM telemetry
. . . radio telemetry
. . . . pulse frequency modulation telemetry
. . television transmission
RT audio signals
code division multiplexing
message processing
messages
multiplexing
orthogonal multiplexing theory
packet switching
pulse communication
radar attenuation
radio attenuation
radio scattering
sentences
sound transmission
syllables
talking
telecommunication
transmission efficiency
transmission rate (communications)
video signals
wireless communication

∞ signals
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT audio signals
auditory signals
beacons
bells
chirp signals
electric pulses
error signals
horns
magnetic signals
messages
pseudorandom sequences
pyrotechnics
radio signals
random signals
signal to noise ratios
sirens
sound generators
symbols
telecommunication
time signals
video signals
visual signals
visual stimuli

signature analysis
RT ∞ analyzing
cepstral analysis
detection

imagery
infrared signatures
microwave signatures
missile signatures
radar signatures
signatures
target recognition

signatures
GS **signatures**
. infrared signatures
. magnetic signatures
. missile signatures
. radar signatures
. spectral signatures
. . microwave signatures
RT amplitude distribution analysis
detection
representations
signature analysis
target recognition
video landmark acquisition and tracking

significance
RT confidence limits
correlation
covariance
degrees of freedom
finite difference theory
null hypothesis
numerical analysis
regression analysis
statistical tests
teleconnections (meteorology)

signs (symbols)
USE **symbols**

signs and symptoms
UF *symptoms*
syndromes
GS **signs and symptoms**
. acquired immunodeficiency syndrome
. bradycardia
. cough
. dyspnea
. edema
. headache
. hematuria
. leukopenia
. nausea
. vertigo
RT asphyxia
diseases
hallucinations
∞ indication
symptomology

Sikhote-Alin meteorite
GS celestial bodies
. **meteorites**
. . iron meteorites
. . . **Sikhote-Alin meteorite**

Sikkim
GS nations
. **Sikkim**
RT **Asia**
Bhutan
Himalayas
India

Sikorsky aircraft
GS **Sikorsky aircraft**
. CH-3 helicopter
. CH-34 helicopter
. CH-54 helicopter
. H-19 helicopter
. H-53 helicopter
. H-56 helicopter
. H-60 Helicopter
. S-58 helicopter
. S-61 helicopter
. S-67 helicopter
. SH-3 helicopter
. SH-4 helicopter
. Sikorsky Whirlwind helicopter
. UH-34 helicopter
. UH-60A helicopter
. UH-61A helicopter
RT ∞ aircraft

Sikorsky HSS-2 helicopter
USE **SH-3 helicopter**

Sikorsky S-58 helicopter
USE **S-58 helicopter**

Sikorsky S-61 helicopter
USE **S-61 helicopter**

Sikorsky S-64 helicopter
USE **CH-54 helicopter**

Sikorsky S-65 helicopter
USE **H-53 helicopter**

Sikorsky S-67 helicopter
USE **S-67 helicopter**

Sikorsky Whirlwind helicopter
GS Sikorsky aircraft
. **Sikorsky Whirlwind helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **Sikorsky Whirlwind helicopter**
RT ∞ aircraft

silanes
GS hydrogen compounds
. hydrides
. . **silanes**
. . . chlorosilanes
. . . methyl chlorosilanes
silicon compounds
. **silanes**
. . chlorosilanes
. . methyl chlorosilanes
RT disilicides
polycarbosilanes
polysilanes

silence
RT noise reduction
transmission loss

silencers
RT attenuators
damping
inhibitors
mufflers
shock absorbers
squelch circuits
suppressors
zero sound

silica
USE **silicon dioxide**

silica gel
DEF A colloidal, highly absorbent silica used as a dehumidifying and dehydrating agent, as a catalyst carrier, and sometimes as a catalyst.
GS gels
. **silica gel**
RT aerogels
dehumidification
dehydration
drying
silicon dioxide
xerogels

silica glass
GS glass
. **silica glass**
RT glass coatings
glass electrodes
glass fibers
glassware
sands
silicon dioxide

silicates
GS silicon compounds
. **silicates**
. . aluminum silicates
. . . andesite
. . . gehlenite
. . . kaolinite
. . . montmorillonite
. . . pyrophyllite
. . aragonite
. . beryl
. . . alexandrite
. . calcium silicates
. . . gehlenite
. . cordierite
. . fayalite
. . feldspars
. . fluorosilicates
. . forsterite
. . garnets
. . . gadolinium-gallium garnet
. . . yttrium-aluminum garnet
. . . yttrium-iron garnet
. . merwinite
. . monticellite
. . nepheline
. . potassium silicates
. . pyroxenes
. . . enstatite
. . sodium silicates
. . . spodumene
. . . talc
. . . tourmaline
. . zeolites
RT akermanite
amphiboles
disilicides
minerals
silicides
silicon dioxide
tetraethyl orthosilicate
vermiculite

silicides
GS silicon compounds
. **silicides**
. . disilicides
RT intermetallics
silicates

silicon
GS chemical elements
. metalloids
. . **silicon**
. . . amorphous silicon
. . . porous silicon
. . . silicon isotopes
RT float zones
reaction bonding
Schottky diodes
silicon alloys

silicon alloys
GS alloys
. **silicon alloys**
RT aluminum alloys
germanium alloys
iron alloys
magnesium alloys
microstructure
nickel alloys
silicon

silicon carbides
GS carbon compounds
. carbides
. . **silicon carbides**
silicon compounds
. **silicon carbides**
RT abrasives
Carborundum (trademark)
ceramic fibers
polycarbosilanes

silicon compounds
GS **silicon compounds**
. flint
. organic silicon compounds
. . triphenyl silicon
. silanes
. . chlorosilanes
. . methyl chlorosilanes
. silicates
. . aluminum silicates
. . . andesite
. . . gehlenite
. . . kaolinite
. . . montmorillonite
. . . pyrophyllite
. . aragonite
. . beryl
. . . alexandrite
. . calcium silicates
. . . gehlenite
. . cordierite
. . fayalite
. . feldspars
. . fluorosilicates
. . forsterite
. . garnets
. . . gadolinium-gallium garnet
. . . yttrium-aluminum garnet
. . . yttrium-iron garnet
. . merwinite
. . monticellite
. . nepheline
. . potassium silicates
. . pyroxenes
. . . enstatite
. . sodium silicates
. . . spodumene
. . . talc
. . . tourmaline
. . zeolites
. silicides
. . disilicides
. silicon carbides
. silicon nitrides
. silicon oxides
. . muscovite
. . nepheline
. . silicon dioxide
. . . quartz
. . . . coesite
. . . . stishovite
. . spodumene
. . silicon tetrachloride
RT akermanite
∞ chemical compounds
Group 4A compounds
methyl polysiloxanes
polysiloxanes
silicones
siloxanes

silicon controlled rectifiers
UF *SCR (rectifiers)*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . thyristors
. . . . **silicon controlled rectifiers**
rectifiers
. thyristors
. . **silicon controlled rectifiers**
RT current converters (AC to DC)
thyratrons

silicon dioxide
DEF The chemically resistant dioxide of silicon. Used for Refrasil (trademark) and silica.
UF *Refrasil (trademark)*
silica
GS chalcogenides
. oxides
. . dioxides
. . . **silicon dioxide**
. . . . quartz
. . . . . coesite
. . . . . stishovite
. . silicon oxides
. . . **silicon dioxide**
. . . . quartz
. . . . . coesite
. . . . . stishovite
silicon compounds
. silicon oxides
. . **silicon dioxide**
. . . quartz
. . . . coesite
. . . . stishovite
RT borosilicate glass
ceramics
E glass
glass
metallic glasses
obsidian
porcelain
quartz crystals
rhyolite
S glass
sands
silica gel
silica glass
silicates
Vycor
xerogels

silicon films
RT amorphous silicon
∞ films
semiconductor devices
SOI (semiconductors)
thin films

silicon isotopes
GS chemical elements
. metalloids
. . silicon
. . . **silicon isotopes**
. nuclides
. . isotopes
. . . **silicon isotopes**

silicon junctions
GS semiconductor junctions
. **silicon junctions**
RT amorphous silicon
heterojunctions
homojunctions
SIS (semiconductors)
SOI (semiconductors)
threshold voltage

silicon nitrides
GS nitrogen compounds
. nitrides
. . **silicon nitrides**
silicon compounds
. **silicon nitrides**
RT ceramic matrix composites
reaction bonding
sialon

silicon oxides
GS chalcogenides
. oxides
. . **silicon oxides**
. . . muscovite
. . . nepheline
. . . silicon dioxide
. . . . quartz
. . . . . coesite
. . . . . stishovite
. . . spodumene
silicon compounds
. **silicon oxides**
. . muscovite
. . nepheline
. . silicon dioxide
. . . quartz
. . . . coesite
. . . . stishovite
. . spodumene
RT akermanite

silicon polymers
GS **silicon polymers**
. silicone resins
. silicones
. . methyl polysiloxanes
. . siloxanes
RT polycarbosilanes
∞ polymers

silicon radiation detectors
GS measuring instruments
. radiation measuring instruments
. . radiation detectors
. . . **silicon radiation detectors**
RT ∞ radiation

silicon rectifiers
USE **crystal rectifiers**

silicon solar cells
USE **solar cells**

silicon tetrachloride
GS halogen compounds
. chlorine compounds
. . chlorides
. . . **silicon tetrachloride**
. halides
. . chlorides
. . . **silicon tetrachloride**
silicon compounds
. **silicon tetrachloride**

silicon transistors
GS electronic equipment
. solid state devices

. . semiconductor devices
. . . transistors
. . . . **silicon transistors**
. . . . . SOS (semiconductors)
RT SOI (semiconductors)

silicon-on-insulator semiconductors
USE **SOI (semiconductors)**

silicon-on-sapphire junctions
USE **SOS (semiconductors)**

silicon-on-sapphire semiconductors
USE **SOS (semiconductors)**

silicon-on-sapphire transistors
USE **SOS (semiconductors)**

silicone resins
GS resins
. **silicone resins**
silicon polymers
. **silicone resins**
RT thermosetting resins

silicone rubber
GS elastomers
. rubber
. . synthetic rubbers
. . . **silicone rubber**
. . . . RTV-40 rubber (trademark)
. . . . RTV-60 rubber (trademark)

silicones
GS silicon polymers
. **silicones**
. . methyl polysiloxanes
. . siloxanes
RT ∞ polymers
silicon compounds

siliconizing
GS hardening (materials)
. **siliconizing**
RT coating
coatings
corrosion prevention
corrosion resistance
oxidation resistance
passivity

silk
GS fabrics
. **silk**
fibers
. **silk**
RT crepe
organic materials

silkworms
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . moths
. . . . . **silkworms**
larvae
. **silkworms**
RT infestation

silos (missile storage)
USE **missile silos**

siloxanes
GS silicon polymers
. silicones
. . **siloxanes**
RT ∞ polymers
polysiloxanes
silicon compounds

silts
USE **sediments**

silver
GS chemical elements
. **silver**
. . silver isotopes
metals
. noble metals
. . **silver**
. . . silver isotopes
. transition metals
. . **silver**
. . . silver isotopes

silver alloys
GS alloys
. **silver alloys**
RT bearing alloys
gold alloys

silver bromides
GS halogen compounds
. bromine compounds
. . bromides
. . . **silver bromides**
. halides
. . bromides
. . . **silver bromides**
. . metal halides
. . . silver halides
. . . . **silver bromides**
silver compounds
. silver halides
. . **silver bromides**

silver cadmium batteries
UF *cadmium silver batteries*
GS electrochemical cells
. electric batteries
. . storage batteries
. . . **silver cadmium batteries**
RT nickel cadmium batteries

silver chlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . **silver chlorides**
. halides
. . chlorides
. . . **silver chlorides**
. . metal halides
. . . silver halides
. . . . **silver chlorides**
silver compounds
. silver halides
. . **silver chlorides**

silver compounds
GS **silver compounds**
. silver halides
. . silver bromides
. . silver chlorides
. . silver iodides
. silver nitrates
. silver oxides
RT ∞ chemical compounds
Group 1B compounds
∞ metal compounds

silver halides
GS halogen compounds
. halides
. . metal halides
. . . **silver halides**
. . . . silver bromides
. . . . silver chlorides
. . . . silver iodides
silver compounds
. **silver halides**
. . silver bromides
. . silver chlorides
. . silver iodides

silver hydrogen batteries
DEF Secondary batteries having silver and hydrogen electrodes. They have good energy density and cycle life.
GS electrochemical cells
. electric batteries
. . storage batteries
. . . **silver hydrogen batteries**

silver iodides
GS halogen compounds
. halides
. . metal halides
. . . silver halides
. . . . **silver iodides**
. iodine compounds
. . iodides
. . . **silver iodides**
silver compounds
. silver halides
. . **silver iodides**

silver isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **silver isotopes**
. silver
. . **silver isotopes**
metals
. noble metals
. . silver
. . . **silver isotopes**
. transition metals
. . silver
. . . **silver isotopes**

silver nitrates
GS nitrogen compounds
. nitrates
. . inorganic nitrates
. . . **silver nitrates**
silver compounds
. **silver nitrates**

silver oxide zinc batteries
USE **silver zinc batteries**

silver oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **silver oxides**
silver compounds
. **silver oxides**

silver zinc batteries
UF *silver oxide zinc batteries*
zinc silver batteries
zinc silver oxide batteries
GS electrochemical cells
. electric batteries
. . storage batteries
. . . **silver zinc batteries**

silviculture
DEF The theory and practice of controlling the establishment, composition, and growth of stands of trees for the harvesting of foliage limbs, and possibly the trees themselves for biomass.
GS agriculture

. **silviculture**
RT biomass
botany
cultivation
forests
orchards
planting
trees (plants)

SIM
UF *scientific instrument modules*
GS modules
. spacecraft modules
. . **SIM**
spacecraft components
. spacecraft modules
. . **SIM**
RT Apollo 15 flight
Apollo project
cameras
instrument packages
∞ instruments

SIMD (computers)
DEF A type of parallel computer with multiple memories and an arithmetic logic unit for each memory. A single control unit allocates instruction execution according to the memory that holds the required operands. Used for single instruction multiple datastream
UF *single instruction multiple datastream*
GS data processing equipment
. computers
. . digital computers
. . . parallel computers
. . . . **SIMD (computers)**
RT architecture (computers)
computer design
computer programming
concurrent processing
interprocessor communication
MIMD (computers)
operating systems (computers)
parallel processing (computers)

SIMICOR (image correlator)
USE **image correlators**

similarities
USE **analogies**

similarity numbers
GS dimensionless numbers
. **similarity numbers**
ratios
. **similarity numbers**
RT dimensional analysis
scaling laws

similarity theorem
GS theorems
. **similarity theorem**
. . Lagrange similarity hypothesis
RT dynamic models
mathematical models
scale models

similitude law
GS laws
. **similitude law**
RT gravitation
inertia
scale models
viscosity

simple harmonic motion
DEF A motion such that the displacement is a sinusoidal function of time.
GS harmonic motion
. **simple harmonic motion**
harmonics
. **simple harmonic motion**
RT acoustics
Fourier analysis
harmonic excitation

simplex method
DEF A finite iterative algorithm used in linear programming whereby successive solutions are obtained and tested for optimality.
GS mathematical logic
. algorithms
. . **simplex method**
optimization
. **simplex method**
RT linear programming
mathematical programming
matrices (mathematics)
∞ methodology
problem solving

simplification
RT assumptions
linearization

SIMS (spectrometry)
USE **secondary ion mass spectrometry**

simulated altitude
USE **altitude simulation**

simulated annealing
(added December 1992)
RT annealing
computerized simulation
laser annealing
optimization
pulse heating
simulation

simulation
GS **simulation**
. atmospheric entry simulation
. computerized simulation
. . analog simulation
. . digital simulation
. . distributed interactive simulation
. control simulation
. data simulation
. environment simulation
. . acoustic simulation
. . altitude simulation
. . space environment simulation
. . thermal simulation
. . . weightlessness simulation
. . . . neutral buoyancy simulation
. exhaust flow simulation
. flight simulation
. landing simulation
. motion simulation
. rheoelectrical simulation
. solar simulation
. systems simulation
. . computer systems simulation
. direct numerical simulation
. large eddy simulation
RT analogies
bionics
bond graphs
data processing equipment
deception
game theory
heuristic methods
hypervelocity projectiles
mathematical models
Monte Carlo method
operations research
simulated annealing
simulators
spacecraft cabin simulators
systems analysis
validity
virtual reality
war games

simulator training
USE **training simulators**

simulators
GS **simulators**
. environment simulators
. . Lunar Gravity Simulator
. . solar simulators
. . space simulators
. . . High Vacuum Orbital Simulator
. . . Langley complex coordinator
. lunar orbit and landing simulators
. motion simulators
. shock simulators
. Shuttle Engineering Simulator
. Shuttle Mission Simulator
. target simulators
. training simulators
. . flight simulators
. . . cockpit simulators
. . spacecraft cabin simulators
. vibration simulators
. . vertical motion simulators
RT analogs
computer systems simulation
dummies
∞ missile simulators
models
simulation
∞ test equipment
test facilities
training devices

simultaneous equations
RT ∞ equations
least squares method
matrices (mathematics)

simultaneous image correlator
USE **image correlators**

sine series
GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . **sine series**
. real variables
. . periodic functions
. . . trigonometric functions
. . . . **sine series**
. . series (mathematics)
. . . **sine series**
functions (mathematics)
. transcendental functions
. . periodic functions
. . . trigonometric functions
. . . . **sine series**

sine waves
DEF Waves which can be expressed as the sine of a linear function of time, or space, or both. Used for sinusoids.
UF *sinusoids*
RT elastic waves
electromagnetic radiation
trigonometric functions
wavelet analysis
∞ waves

Singapore
GS nations
. **Singapore**
RT Asia

single channel per carrier transmission
DEF Voice and data transmission system for satellite communication featuring the use of a carrier frequency for each channel of communication. Used for SCPC transmission.
UF *SCPC transmission*
GS telecommunication
. **single channel per carrier transmission**
transmission
. signal transmission
. . data transmission
. . . **single channel per carrier transmission**
RT carrier frequencies
channels (data transmission)
satellite communication
satellite transmission
spacecraft communication
telegraph systems
telemetry
telephony
voice communication
voice data processing

single crystals
UF *monocrystals*
GS crystals
. **single crystals**
RT bicrystals
boules
Bravais crystals
Bridgman method
crystal lattices
diamonds
graphite
needles
piezoelectric crystals
polycrystals
space processing
ultrapure metals

single engine aircraft
GS **single engine aircraft**
. Cessna 172 aircraft
. Cessna 205 aircraft
. Cessna 210 aircraft
. F-8 aircraft
. F-9 aircraft
. F-16 aircraft
. F-84 aircraft
. F-86 aircraft
. F-94 aircraft
. F-100 aircraft
. F-101 aircraft
. F-102 aircraft
. F-104 aircraft
. F-105 aircraft
. F-106 aircraft
. Jaguar aircraft
. jet provost aircraft
. L-29 jet trainer
. MiG aircraft
. Mirage aircraft
. . Mirage 3 aircraft
. P-51 aircraft
. P-1127 aircraft
. P-1154 aircraft
. T-2 aircraft
. T-28 aircraft
. T-33 aircraft
. Vampire MK 35 aircraft
. VJ-101 aircraft
RT ∞ aircraft
fighter aircraft
general aviation aircraft

single event upsets
DEF Radiation-induced errors in microelectronic circuits caused when charged particles (usually from the radiation belts or from cosmic rays) lose energy by ionizing the medium through which they pass, leaving behind a wake of electron-hole pairs.
GS radiation effects
. **single event upsets**
RT astronics
avionics
charged particles
cosmic rays
electron-hole drops
inner radiation belt
ionization
microelectronics
radiation damage
radiation dosage
satellite-borne instruments
secondary cosmic rays
spacecraft charging
spacecraft electronic equipment

single input single output systems
USE **SISO (control systems)**

single instruction multiple datastream
USE **SIMD (computers)**

single sideband modulation
USE **single sideband transmission**

single sideband transmission
UF *single sideband modulation*
GS transmission
. electromagnetic wave transmission
. . radio transmission
. . . **single sideband transmission**
. signal transmission
. . radio transmission
. . . **single sideband transmission**
RT amplitude modulation
double sideband transmission
sidebands
television transmission
voice communication
wave propagation

single stage rocket vehicles
GS rocket vehicles
. **single stage rocket vehicles**
. . Agena rocket vehicles
. . . Agena A rocket vehicle
. . . Agena B rocket vehicle
. . . Agena C rocket vehicle
. . . Agena D rocket vehicle
. . Arcas rocket vehicles
. . Black Brant sounding rockets
. . . Black Brant 1 sounding rocket
. . . Black Brant 2 sounding rocket
. . . Black Brant 3 sounding rocket
. . . Black Brant 4 sounding rocket
. . . Black Brant 5 sounding rocket
. . Black Knight rocket vehicle
. . Dornier paraglider rocket vehicle
. . Genie rocket vehicle
. . Honest John rocket vehicle
. . Hyla-Star rocket vehicle
. . Little John rocket vehicle
. . Loki rocket vehicle
. . Nomad launch vehicle
. . Veronique rocket vehicles
. . Viking rocket vehicle
. . Zuni rocket vehicle
RT Mauler missile
rocket engines
∞ vehicles

single stage to orbit vehicles
DEF Second and third generation (post-Space Shuttle) vehicles studied for Earth orbit international space transportation system.
GS launch vehicles
. reusable launch vehicles
. . **single stage to orbit vehicles**
. . . Delta Clipper
. . . HOTOL launch vehicle
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . **single stage to orbit vehicles**
. . . . Delta Clipper
. . . . HOTOL launch vehicle
RT NASA programs
space shuttles
space transportation
∞ vehicles
X-30 vehicle

single-phase flow
UF *one-phase flow*
uniphase flow
GS fluid flow
. **single-phase flow**
RT critical flow
gas flow
laminar flow
liquid flow
mass flow
multiphase flow
orifice flow
pipe flow
steady flow
steam flow
subcritical flow
supercritical flow
turbulent flow
two phase flow
uniform flow
unsteady flow

singular integral equations
GS analysis (mathematics)
. functional analysis
. . integral equations
. . . **singular integral equations**
RT ∞ equations

singularity (mathematics)
GS analysis (mathematics)
. complex variables
. . **singularity (mathematics)**
. . . naked singularities
RT points (mathematics)
uniqueness

sinkholes
DEF Circular depressions in a Karst area. Their drainage is subterraneous, their size is measured in meters or tens of meters, and they are commonly funnel shaped.
GS landforms
. structural basins
. . karst
. . . **sinkholes**
RT kettles (geology)
structural properties (geology)

sinking
RT falling

retraction
submerging
water immersion

sinks
SN (EXCLUDES PLUMBING FIXTURES—LIMITED TO AREAS FOR ABSORPTIVE DISPOSAL OF HEAT OR FLUIDS)
GS **sinks**
. **heat sinks**
RT absorbers (materials)
disposal
∞ sources

sinks (geology)
USE **structural basins**

Sinope
(added January 1996)
DEF A natural satellite of Jupiter orbiting at a mean distance of 23,700,000 kilometers.
GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . **Sinope**
RT Jupiter (planet)

sintered aluminum powder
GS particles
. metal particles
. . metal powder
. . . powdered aluminum
. . . . **sintered aluminum powder**
. powder (particles)
. . metal powder
. . . powdered aluminum
. . . . **sintered aluminum powder**
RT aluminum
powder metallurgy

sintering
DEF The bonding of adjacent surfaces of particles in a mass of powders, usually metal, by heating. Used for presintering.
UF *presintering*
GS **sintering**
. liquid phase sintering
RT agglomeration
combustion synthesis
furnaces
growth
heating
hot isostatic pressing
hot pressing
metal powder
mixed crystals
porosity
powder metallurgy
pyrometallurgy
reaction bonding
roasting
shrinkage
sialon

sinuses
DEF A term used in anatomical nomenclature to designate a cavity or hollow space.
GS **sinuses**
. paranasal sinuses
RT carotid sinus body
carotid sinus reflex
nose (anatomy)
respiration

sinusoids
USE **sine waves**

Sioux helicopter
USE **OH-13 helicopter**

siphoning
DEF The transfer of a liquid from a high to a lower level by atmospheric pressure forcing it up the shorter leg while the weight of the liquid in the longer leg causes continuous downward flow.
RT ∞ fluids
siphons
thermosiphons

siphons
RT materials handling
pipelines
pipes (tubes)
pumps
siphoning
∞ tubes

SIR-A
USE **Shuttle Imaging Radar**

SIR-B
USE **Shuttle Imaging Radar**

SIR-C
USE **Shuttle Imaging Radar**

SIR-D
USE **Shuttle Imaging Radar**

sirens
RT horns
noise intensity
signal generators
∞ signals
sound generators
sound intensity
sound transmission
warning systems

SIRIO satellite
GS artificial satellites
. synchronous satellites
. . **SIRIO satellite**
RT Italian space program
Italy

SIRS B satellite
GS artificial satellites
. meteorological satellites
. . **SIRS B satellite**
RT meteorological flight
meteorological instruments
satellite observation
unmanned spacecraft

SIRTF
USE **Space Infrared Telescope Facility**

SIS (semiconductors)
DEF Semiconductor devices consisting of an electrically insulating layer sandwiched between two semiconducting materials. Used for semiconductor insulator semiconductors.
UF *semiconductor insulator semiconductors*
GS electronic equipment
. solid state devices
. . **SIS (semiconductors)**
RT barrier layers
MIM (semiconductors)
MIS (semiconductors)
MSM (semiconductors)
photodiodes
photovoltaic cells
p-n junctions
Schottky diodes
semiconductor diodes
semiconductor junctions
silicon junctions
SOI (semiconductors)
solar cells
SOS (semiconductors)
tin oxides
transistors

SIS (superconductors)
(added March 1989)
UF *superconductor insulator superconductors*
GS electronic equipment
. solid state devices
. . **SIS (superconductors)**
superconducting devices
. **SIS (superconductors)**
RT high temperature superconductors
Josephson junctions
squid (detectors)

SISO (control systems)
(added October 1988)
UF *single input single output systems*
RT ∞ control
control stability
control systems design
control theory
feedback control
∞ systems
systems stability

site data processors
UF *SDP (computers)*
GS data processing equipment
. computers
. . **site data processors**
RT Apollo project
∞ data
data links
data processing

site selection
DEF Selecting the location for any physical plant (nuclear power, solar house, etc.) while considering the environmental impact, safety, etc.
GS selection
. **site selection**
RT airports
certification
∞ facilities
industrial areas
land use
leasing
logistics
options
resources
roads
routes
services
sites
terminal facilities
transportation
utilities

sites
UF tracts
GS **sites**
. Central Atlantic Regional Ecol Test Site
. landing sites
. . lunar landing sites
. launching sites
. . launching pads
. offshore reactor sites
RT airport planning
barren land
∞ facilities

land
∞ plots
position (location)
regions
rural land use
site selection

sitting position
RT prone position
rest
seats
supine position

size (dimensions)
GS **size (dimensions)**
. grain size
RT fineness

size determination
GS **size determination**
. precipitation particle measurement
RT body measurement (biology)
classifiers
dimensional measurement
∞ measurement
particle size distribution
∞ sizing

size distribution
DEF The study of the size of objects or features and their distribution.
GS **size distribution**
. particle size distribution
RT drop size
mass distribution
statistical distributions

size separation
UF *sizing (separation)*
RT beneficiation
classifiers
∞ classifying
concentrators
filtration
flotation
metal powder
particle size distribution
powder (particles)
∞ separation
settling
∞ sizing

∞ **sizing**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT body measurement (biology)
size determination
size separation
sizing (shaping)
sizing (surface treatment)
sizing materials

sizing (separation)
USE **size separation**

sizing (shaping)
GS metal working
. **sizing (shaping)**
RT coining
pressing (forming)
∞ sizing

sizing (surface treatment)
SN (EXCLUDES MECHANICAL SHAPING OR REMOVAL OF SURFACE MATERIALS)
RT finishes
∞ sizing
sizing materials
∞ surfaces

sizing materials
SN (MATERIALS USED FOR SURFACE TREATMENT)
RT binders (materials)
clays
fillers
glues
∞ materials
∞ sizing
sizing (surface treatment)
starches

sizing screens
GS separators
. classifiers
. . **sizing screens**
RT agitation
concentrators
fluid filters
∞ screens
shakers
sieves

skeleton
USE **musculoskeletal system**

skewness
RT asymmetry
deformation
displacement
distortion
distribution moments
eccentricity
moments

skid landings
GS landing
. aircraft landing
. . **skid landings**
RT air cushion landing systems
crash landing
hydroplaning
skidding

skidding
RT hydroplaning
landing gear
sideslip
skid landings
sleds
yaw

skills
USE **abilities**

skin (anatomy)
GS anatomy
. **skin (anatomy)**
. . epidermis
RT albinism
∞ blisters
carotene
chlorophylls
collagens
contact dermatitis
cytochromes
dermatitis
dermatology
epithelium
evaporation
hair
homeostasis
leather
melanin
membranes
perspiration
petechia
pigments
secretions
sense organs
thermoreceptors
touch

skin (structural member)
GS **membranes**
. membrane structures
. . **skin (structural member)**
structural members
. membrane structures
. . **skin (structural member)**
RT aircraft construction materials
∞ construction materials
hulls (structures)
metal shells
shells (structural forms)
stressed-skin structures
thin walled shells
thin walls
toroidal shells
webs (supports)

skin friction
UF *friction pressure drop*
GS friction
. **skin friction**
. . friction drag
. . . aerodynamic drag
. . . . supersonic drag
. . . viscous drag
RT aerodynamic heating
drag
drag devices
flow resistance
fluid flow
friction factor
riblets
streamlining

skin grafts
RT surgery
therapy

skin resistance
GS electrical properties
. electrical impedance
. . electrical resistance
. . . **skin resistance**
impedance
. electrical impedance
. . electrical resistance
. . . **skin resistance**
RT ∞ resistance

skin temperature (biology)
GS temperature
. **skin temperature (biology)**
RT ∞ biology
fever
hyperthermia
hypothermia

skin temperature (non-biological)
GS surface properties
. surface temperature
. . **skin temperature (non-biological)**
temperature
. surface temperature
. . **skin temperature (non-biological)**
RT aerodynamic heating
aerothermodynamics

Skinner boxes
RT behavior
psychological tests
psychometrics

skirts
RT afterbodies

boattails
conical nozzles
exhaust nozzles
foundations
∞ jet nozzles
rocket nozzles

skis
RT hydrofoils
hydroplanes (surfaces)
landing gear

Skua rocket vehicles
GS rocket vehicles
. sounding rockets
. . **Skua rocket vehicles**
RT solid propellant rocket engines
∞ vehicles

skull
GS anatomy
. head (anatomy)
. . **skull**
. . . cranium
. . . . intracranial cavity
. . . mastoids
. musculoskeletal system
. . bones
. . . **skull**
. . . . cranium
. . . . . intracranial cavity
. . . . mastoids
RT forehead
intercranial circulation

sky
GS **sky**
. night sky
RT cloud cover
clouds (meteorology)
dayglow
Rayleigh scattering
sunlight

sky brightness
GS electromagnetic properties
. optical properties
. . brightness
. . . **sky brightness**
RT airglow
aurorae
cloud cover
daytime
gegenschein
glare
light (visible radiation)
light emission
luminance
night
night sky
nightglow
solar radiation
sunlight
zodiacal light

sky radiation
GS atmospheric radiation
. **sky radiation**
. . airglow
. . . geocoronal emissions
. . . nightglow
. . . twilight glow
. . dayglow
electromagnetic radiation
. light (visible radiation)
. . **sky radiation**
. . . airglow
. . . . geocoronal emissions
. . . . nightglow
. . . . twilight glow
. . . dayglow
RT background radiation
pyranometers
∞ radiation
stratosphere radiation
sunlight
thermal radiation
tropospheric radiation

sky surveys (astronomy)
GS observation
. **sky surveys (astronomy)**
surveys
. **sky surveys (astronomy)**
RT asteroid detection
astronomical catalogs
astronomy
indexes (documentation)
northern sky
Southern sky

sky waves
DEF In radio, radio energy that is received after having been reflected by the ionosphere.
GS electromagnetic radiation
. radio waves
. . **sky waves**
. . . whistlers
RT ground wave propagation
ionospheric noise

Skyboit missile
GS missiles
. ballistic missiles
. . **Skybolt missile**
RT solid propellant rocket engines

Skycrane helicopter
USE **CH-54 helicopter**

Skydrol (trademark)
GS liquids
. hydraulic fluids
. . **Skydrol (trademark)**
RT esters
phosphates
plasticizers

Skyhawk aircraft
USE **A-4 aircraft**

skyhook balloons
DEF Large free balloons having plastic envelopes, used especially for constant level meteorological observations at very high altitudes. (Originally a code name for a U.S. Navy project.)
GS expandable structures
. inflatable structures
. . balloons
. . . high altitude balloons
. . . . **skyhook balloons**
RT high altitude
meteorological balloons
ROBIN balloons
rockoons

Skylab 1
UF *SKYLAB space station (unmanned)*
SL 1
GS artificial satellites
. orbital workshops
. . **Skylab 1**
. space stations
. . **Skylab 1**
laboratories
. space laboratories
. . manned orbital laboratories
. . . **Skylab 1**
manned spacecraft
. manned orbital laboratories
. . **Skylab 1**
. orbital workshops
. . **Skylab 1**
stations
. space stations
. . **Skylab 1**
RT airlock modules
command service modules
EREP
multiple docking adapters
space missions

Skylab 2
UF *SL 2*
GS artificial satellites
. orbital workshops
. . **Skylab 2**
. space stations
. . **Skylab 2**
laboratories
. space laboratories
. . manned orbital laboratories
. . . **Skylab 2**
manned spacecraft
. manned orbital laboratories
. . **Skylab 2**
. orbital workshops
. . **Skylab 2**
stations
. space stations
. . **Skylab 2**
RT airlock modules
command service modules
EREP
multiple docking adapters
Saturn 1B launch vehicles
Saturn 5 launch vehicles
space missions

Skylab 3
UF *SL 3*
GS artificial satellites
. orbital workshops
. . **Skylab 3**
. space stations
. . **Skylab 3**
laboratories
. space laboratories
. . manned orbital laboratories
. . . **Skylab 3**
manned spacecraft
. manned orbital laboratories
. . **Skylab 3**
. orbital workshops
. . **Skylab 3**
stations
. space stations
. . **Skylab 3**
RT airlock modules
command service modules
EREP
multiple docking adapters
Saturn 1B launch vehicles
Saturn 5 launch vehicles
space missions

Skylab 4
UF *SL 4*
GS artificial satellites
. orbital workshops
. . **Skylab 4**
. space stations
. . **Skylab 4**
laboratories

. space laboratories
. . manned orbital laboratories
. . . **Skylab 4**
manned spacecraft
. manned orbital laboratories
. . **Skylab 4**
. orbital workshops
. . **Skylab 4**
stations
. space stations
. . **Skylab 4**
RT airlock modules
command service modules
EREP
multiple docking adapters
Saturn 1B launch vehicles
Saturn 5 launch vehicles
space missions

Skylab program
GS programs
. NASA programs
. . NASA space programs
. . . **Skylab program**
. space programs
. . NASA space programs
. . . **Skylab program**
RT **AAP 1 mission**
AAP 2 mission
AAP 3 mission
AAP 4 mission
airlock modules
Apollo applications program
Apollo flights
Apollo project
Apollo spacecraft
Apollo telescope mount
Earth Resources Information System
Earth Resources Program
Earth Resources Survey Program
orbital workshops
Saturn 1 workshop
Saturn 5 workshop
Saturn workshops
Spacelab

SKYLAB space station (unmanned)
USE **Skylab 1**

Skylark
USE **Skylark rocket vehicle**

Skylark rocket vehicle
UF *Skylark*
GS rocket vehicles
. multistage rocket vehicles
. . **Skylark rocket vehicle**
. sounding rockets
. . **Skylark rocket vehicle**
RT solid propellant rocket engines

Skymaster aircraft
USE **C–54 aircraft**

Skynet satellites
GS artificial satellites
. **Skynet satellites**
RT communication satellites
satellite networks
UK satellites

Skyraider aircraft
USE **A–1 aircraft**

Skyrocket aircraft
USE **D–558 aircraft**

Skystreak aircraft
USE **D–558 aircraft**

Skyvan aircraft
USE **SC–7 aircraft**

Skywarrior aircraft
USE **A–3 aircraft**

SL 1
USE **Skylab 1**

SL 2
USE **Skylab 2**

SL 3
USE **Skylab 3**

SL 4
USE **Skylab 4**

SL–3 rocket engine
GS engines
. rocket engines
. . solid propellant rocket engines
. . . **SL–3 rocket engine**

slabs
RT billets
blocks
flat plates
metal plates
plates (structural members)
∞ platforms
structural members

slags
RT aggregates
reaction products
wastes

SLAM
USE **supersonic low altitude missile**

slamming
RT fluid dynamics

slant
USE **slopes**

slant perception
USE **space perception**

slashes
USE **clearings (openings)**

Slater orbitals
GS orbitals
. **Slater orbitals**
RT Hartree–Fock–Slater method

sleds
GS surface vehicles
. **sleds**
. . rocket propelled sleds
RT dollies
skidding
towed bodies
tractors
trailers

sleep
UF *drowsiness*
GS **sleep**
. hypersomnia
. hypnosis
. insomnia
RT dreams
∞ drives
rapid eye movement state
rest

sleep deprivation
GS deprivation
. **sleep deprivation**
RT consciousness
fatigue (biology)
insomnia
wakefulness

sleeves
SN (EXCLUDES CLOTHING)
RT connectors
couplings
fasteners
fittings
joints (junctions)

slender bodies
GS **slender bodies**
. slender cones
RT aerodynamic configurations
aerodynamics
axisymmetric bodies
∞ **bodies**
ducted bodies
fineness ratio
missile bodies
power law bodies
∞ **sharpness**
streamlined bodies
symmetrical bodies
∞ thin bodies

slender cones
GS cones
. conical bodies
. . **slender cones**
slender bodies
. **slender cones**
symmetrical bodies
. bodies of revolution
. . conical bodies
. . . **slender cones**
RT aerodynamic configurations
axisymmetric bodies

slender wings
UF *high aspect ratio wings*
GS airfoils
. wings
. . **slender wings**
. . . infinite span wings
RT fixed wings
wing planforms
wing rock

slewing
DEF Of a gyro, the rotation of the spin axis caused by applying torque about the axis of rotation. In radar, changing the scale on the display.
RT antennas
error signals
positioning devices (machinery)
radar tracking
servomotors
∞ spinners

slicing
GS cutting
. **slicing**
RT metal cutting
planing
planning
scarfing
∞ separation
splitting

slicks
USE **oil slicks**

slides
USE **chutes**

slides (microscopy)
DEF Rectangular pieces of glass on which objects are mounted for microscopic examination.
RT microscopy

sliding
DEF Relative displacement between two bodies along a surface, without loss of contact between the bodies.
RT interfacial tension
lubrication
mass flow
∞ **slip**
slumping
static friction

∞ **sliding contact**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT contact loads
electric contacts
sliding friction
vapor phase lubrication

sliding friction
GS friction
. kinetic friction
. . **sliding friction**
RT coefficient of friction
dry friction
electric contacts
∞ sliding contact
static friction
wear
wear resistance

∞ **slip**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT plastic deformation
polyslips
sideslip
sliding

slip bands
USE **edge dislocations**

slip casting
GS forming techniques
. casting
. . **slip casting**

slip flow
SN (LIMITED TO RAREFIED GAS FLOW IN THE REGION BETWEEN KNUDSEN NUMBERS 0.01 AND 0.1 ONLY—EXCLUDES TRANSITION FLOW, FREE MOLECULE FLOW CREEP, SHEAR FLOW, AND PLASTIC FLOW)
DEF Rarefied gas flow in the region between Knudsen numbers 0.01 and 0.1.
GS fluid flow
. gas flow
. . molecular flow
. . . **slip flow**
RT continuum flow
free molecular flow
low density wind tunnels
rarefied gas dynamics
transition flow

slipstreams
GS wakes
. aircraft wakes
. . **slipstreams**
. . . propeller slipstreams
. . . turbulent wakes
. . . **slipstreams**
. . . . propeller slipstreams
RT backwash
Strouhal number
turbulence

slits
GS openings
. **slits**
RT apertures
Fresnel reflectors
slots

slivers
RT fibers
wood

slopes
DEF The inclined surfaces of any part of the Earth's surface, as in hillslopes; also broad parts of a continent descending toward an ocean, as in the Pacific slope. Used for cant, slant, and steepness.
UF *cant*
slant
steepness
GS **slopes**
. glide paths
RT angles (geometry)
cliffs
escarpments
∞ grade
gradients
height
∞ inclination
landforms
landslides
level (horizontal)
pitch (inclination)
∞ profiles
∞ rakes
ramp functions
ramps (structures)
topography

sloshing
USE **liquid sloshing**

slot antennas
UF *slotted antennas*
GS antennas
. directional antennas
. . **slot antennas**
RT antenna design
horn antennas
microwave antennas
radant
radar antennas
waveguide antennas

slots
GS **slots**
. wing slots
RT lift devices
louvers
openings
slits

slotted antennas
USE **slot antennas**

slotted wind tunnels
GS test facilities
. wind tunnels
. . **slotted wind tunnels**
RT supersonic wind tunnels
transonic wind tunnels
trisonic wind tunnels
vents

Slovakia
(added September 1994)
GS nations
. **Slovakia**
RT Czech Republic
Czechoslovakia
Europe

slow neutrons
USE **thermal neutrons**

sludge
DEF A water-formed sedimentary deposit.
GS **sludge**
. activated sludge
RT deposits
liquid wastes
mud
ocean bottom
organic wastes (fuel conversion)
reaction products
sediments
sewage treatment
solid wastes
waste treatment
wastes

slumping
RT geomorphology
mass flow
sliding

slurries
GS mixtures
. **slurries**
RT dispersions
emulsions
gels
rheocasting
slurry propellants
slush hydrogen

slurry propellants
GS propellants
. rocket propellants
. . liquid rocket propellants
. . . **slurry propellants**
. . . . slush hydrogen
RT aircraft fuels
colloidal propellants
dispersions
gelled rocket propellants
metal fuels
metal propellants
monopropellants
slurries
solid rocket propellants

slush
RT bay ice
cryogenic rocket propellants
ice
runway conditions
snow
water

slush hydrogen
(added March 1990)
GS propellants
. rocket propellants
. . liquid rocket propellants
. . . slurry propellants
. . . . **slush hydrogen**
RT hydrogen fuels
liquid hydrogen
slurries

SLV
USE **Standard Launch Vehicles**

SLV (soft landing vehicles)
USE **soft landing spacecraft**

SM-65 missile
USE **Atlas launch vehicles**

SM-68 missile
USE **Titan 1 ICBM**

SM-68B missile
USE **Titan 2 ICBM**

Small Astronomy Satellite 1
USE **SAS-1**

Small Astronomy Satellite 2
USE **SAS-2**

Small Astronomy Satellite 3
USE **SAS-3**

Small Astronomy Satellites
USE **SAS**

small perturbation flow
GS fluid flow
. **small perturbation flow**
RT flow distortion
oscillating flow

small satellite technology
(added January 1996)
UF *Small Satellite Technology Initiative*
SSTI
GS technologies
. **small satellite technology**
RT cost reduction
remote sensing
satellite design
small scientific satellites

Small Satellite Technology Initiative
USE **small satellite technology**

small scientific satellites
GS artificial satellites
. scientific satellites
. . **small scientific satellites**
RT small satellite technology

Small Water Plane Area Twin Hull
USE **SWATH (ship)**

smallpox
GS diseases
. infectious diseases
. . viral diseases
. . . **smallpox**

smart structures
(added August 1990)
DEF Structures and/or structural components which contain embedded internal sensors. The sensors serve as lifetime health monitors analogous to a central nervous system, and give information on structural properties, providing real time nondestructive evaluation.
UF *intelligent structures*
RT active control
adaptive control
composite structures
fiber optics
large space structures
space station structures
spacecraft structures
strain measurement
structural engineering
structural members
∞ structures
systems health monitoring

smear
RT frequency response
image contrast
signal fading
television transmission
video data

smell
USE **olfactory perception**

smelting
RT melting
∞ metallurgy
reduction (chemistry)
refining

Smith chart
RT electrical impedance
impedance
polar coordinates
reactance
standing wave ratios
transmission lines
waveguides

SMM-A
USE **Solar Maximum Mission-A**

smog
RT air pollution
air sampling
carbon monoxide
combustion products
environmental chemistry
exhaust gases
flames
fog
hydrocarbon combustion
hydrocarbon poisoning
lead poisoning
particulates
smoke

smoke
GS mixtures
. dispersions
. . plastisols
. . . **smoke**
RT aerosols
air pollution
combustion products
dust
exhaust gases
fire damage
fog
forest fires
fumes
haze detection
∞ markers
particles
particulates
smog
smoldering
soot
vapors
visibility

smoke abatement
RT aerosols
air pollution
carbon dioxide removal
exhaust gases
pollution
soot

smoke detectors
GS measuring instruments
. indicating instruments
. . **smoke detectors**
RT fire prevention
fumes
gas detectors
safety devices
signal processing

smoke trails
RT ∞ tracks
wind direction
wind measurement
wind profiles

smoldering
(added July 1997)
DEF A slow, flameless combustion of a solid fuel.
GS combustion
. **smoldering**
RT burning rate
combustion stability
erosive burning
fires
flammability
smoke

smoothing
GS **smoothing**
. **data smoothing**
RT adjusting
flattening
honing
leveling
planing
polishing
roughness
structured grids (mathematics)

SMS
USE **Synchronous Meteorological Satellite**

SMS (Shuttle)
USE **Shuttle Mission Simulator**

SMS 1
DEF A meteorological satellite in synchronous orbit over the Atlantic Ocean to give coverage to the Eastern US. It was launched in May 1974 and is no longer operational, but still in orbit.
GS **artificial satellites**
. **meteorological satellites**
. . Synchronous Earth Observatory satellite
. . . **SMS 1**
. . Synchronous Meteorological Satellite
. . . **SMS 1**
. **synchronous satellites**
. . Synchronous Earth Observatory satellite
. . . **SMS 1**
. . Synchronous Meteorological Satellite
. . . **SMS 1**
RT GOES 2
NOAA satellites

SMS 2
DEF Meteorological satellite in synchronous orbit over Honolulu to give coverage to the Western US. It was launched in February 1975 and is no longer operational, but still in orbit.
GS **artificial satellites**
. **meteorological satellites**
. . Synchronous Earth Observatory satellite
. . . **SMS 2**

. . Synchronous Meteorological Satellite
. . . **SMS 2**
. **synchronous satellites**
. . Synchronous Earth Observatory satellite
. . . **SMS 2**
. . Synchronous Meteorological Satellite
. . . **SMS 2**
RT GOES 2
NOAA satellites

SMU (maneuvering units)
USE **self maneuvering units**

snails
GS animals
. invertebrates
. . molluscs
. . . **snails**

snakes
GS animals
. vertebrates
. . reptiles
. . . **snakes**

snaking
USE **lateral oscillation**

SNAP
UF *Systems for Nuclear Auxiliary Power*
GS auxiliary power sources
. nuclear auxiliary power units
. . **SNAP**
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 1
. . . SNAP 3
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 11
. . . SNAP 13
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . . SNAP 50
nuclear electric power generation
. nuclear auxiliary power units
. . **SNAP**
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 1
. . . SNAP 3
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 11
. . . SNAP 13
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . . SNAP 50
RT electric generators
heat exchangers
nuclear power reactors
SNAPTRAN reactor
space power unit reactors
∞ systems
thermionic converters
thermionic power generation
thermoelectric generators
thermoelectric power generation
Transient Reactor Test Facility
turbogenerators

SNAP 1
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 1**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 1**
RT heat exchangers
turbogenerators

SNAP 2
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . **SNAP 2**
. . space power reactors
. . . fission electric cells
. . . . **SNAP 2**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . **SNAP 2**
. . space power reactors
. . . fission electric cells
. . . . **SNAP 2**
. nuclear power reactors
. . space power reactors
. . . fission electric cells
. . . . **SNAP 2**
nuclear reactors
. nuclear power reactors
. . space power reactors
. . . fission electric cells
. . . . **SNAP 2**
RT heat exchangers
space power unit reactors
turbogenerators

SNAP 3
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 3**
electric generators
. direct power generators
. . thermoelectric generators
. . . **SNAP 3**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 3**

SNAP 4
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . **SNAP 4**
. . space power reactors
. . . fission electric cells
. . . . **SNAP 4**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . **SNAP 4**
. . space power reactors
. . . fission electric cells
. . . . **SNAP 4**
. nuclear power reactors
. . space power reactors
. . . fission electric cells
. . . . **SNAP 4**
nuclear reactors
. nuclear power reactors
. . space power reactors
. . . fission electric cells
. . . . **SNAP 4**
RT space power unit reactors

SNAP 7
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 7**
electric generators
. direct power generators
. . radioisotope batteries
. . . **SNAP 7**
. . thermoelectric generators
. . . **SNAP 7**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 7**

SNAP 8
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . **SNAP 8**
. . space power reactors
. . . fission electric cells
. . . . **SNAP 8**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . **SNAP 8**
. . space power reactors
. . . fission electric cells
. . . . **SNAP 8**
. nuclear power reactors
. . space power reactors
. . . fission electric cells
. . . . **SNAP 8**
nuclear reactors
. nuclear power reactors
. . space power reactors
. . . fission electric cells
. . . . **SNAP 8**
RT heat exchangers
space power unit reactors
turbogenerators

SNAP 11
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 11**
electric generators
. direct power generators
. . radioisotope batteries
. . . **SNAP 11**
. . thermoelectric generators
. . . **SNAP 11**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP

. . . **SNAP 11**

SNAP 13
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 13**
electric generators
. direct power generators
. . radioisotope batteries
. . . **SNAP 13**
. . thermionic converters
. . . **SNAP 13**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 13**
RT thermionic power generation

SNAP 15
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 15**
electric generators
. direct power generators
. . radioisotope batteries
. . . **SNAP 15**
. . thermoelectric generators
. . . **SNAP 15**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 15**

SNAP 17
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 17**
electric generators
. direct power generators
. . radioisotope batteries
. . . **SNAP 17**
. . thermoelectric generators
. . . **SNAP 17**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 17**

SNAP 19
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 19**
electric generators
. direct power generators
. . radioisotope batteries
. . . **SNAP 19**
. . thermoelectric generators
. . . **SNAP 19**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 19**

SNAP 21
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 21**
electric generators
. direct power generators
. . radioisotope batteries
. . . **SNAP 21**
. . thermoelectric generators
. . . **SNAP 21**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 21**

SNAP 23
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 23**
electric generators
. direct power generators
. . radioisotope batteries
. . . **SNAP 23**
. . thermoelectric generators
. . . **SNAP 23**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 23**

SNAP 27
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 27**
electric generators
. direct power generators
. . radioisotope batteries
. . . **SNAP 27**
. . thermoelectric generators
. . . **SNAP 27**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 27**

SNAP 29
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 29**
electric generators
. direct power generators
. . radioisotope batteries
. . . **SNAP 29**
. . thermoelectric generators
. . . **SNAP 29**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 29**

SNAP 50
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 50**
. . space power reactors
. . . **SNAP 50**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 50**
. . space power reactors
. . . **SNAP 50**
. nuclear power reactors
. . space power reactors
. . . **SNAP 50**
nuclear reactors
. nuclear power reactors
. . space power reactors
. . . **SNAP 50**
RT space power unit reactors

SNAP 9A
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 9A**
electric generators
. direct power generators
. . radioisotope batteries
. . . **SNAP 9A**
. . thermoelectric generators
. . . **SNAP 9A**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 9A**

SNAP 10A
GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . **SNAP 10A**
. . space power reactors
. . . fission electric cells
. . . . **SNAP 10A**
electric generators
. direct power generators
. . thermoelectric generators
. . . **SNAP 10A**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . **SNAP 10A**
. . space power reactors
. . . fission electric cells
. . . . **SNAP 10A**
. nuclear power reactors
. . space power reactors
. . . fission electric cells
. . . . **SNAP 10A**
nuclear reactors
. nuclear power reactors
. . space power reactors
. . . fission electric cells
. . . . **SNAP 10A**
RT heat exchangers
Snapshot satellite

Snapshot satellite
GS artificial satellites
. **Snapshot satellite**
RT SNAP 10A

SNAPTRAN reactor
RT∞ reactors
SNAP

snatching
USE **spacecraft recovery**

sneak circuit analysis
DEF In electrical or electronic circuits, the detection and/or prevention of "sneak circuits" — paths having latent electrical conditions resulting from unapparent stimulus–response relationships which cause unwanted functions or inhibit desired function.
GS network analysis
. **sneak circuit analysis**
RT automatic test equipment
circuit protection
circuit reliability
critical path method
electric networks
electrical faults
reliability engineering

short circuits
signal flow graphs
trees (mathematics)

sneezing
GS reflexes
. respiratory reflexes
. . **sneezing**
RT involuntary actions
vasoconstriction

Snellen tests
RT ∞ tests
visual acuity

Snells law
DEF A law of geometric optics that defines the amount of bending that takes place when a light ray strikes a refractive boundary (e.g., an air–glass interface) at a non–normal angle.
GS laws
. **Snells law**
RT geometrical optics
∞ optics
refraction
refractivity

snow
DEF A form of ice composed of small white or translucent hexagonal crystals of frozen water, formed directly by sublimation of atmospheric water vapor around solid nuclei at a temperature below the freezing point. The crystals grow while floating or falling to the ground, and are often agglomerated into snowflakes.
GS precipitation (meteorology)
. **snow**
RT acid rain
cirques (landforms)
cloud glaciation
firn
ice formation
slush
storms (meteorology)

Snow aerial applicator aircraft S–2B
USE **agricultural aircraft**

snow cover
GS precipitation (meteorology)
. **snow cover**
RT cloud glaciation
cold weather
Earth cryosphere
storm damage
storms
storms (meteorology)

Snow S–2 aircraft
USE **agricultural aircraft**

snowplow effect
USE **plasma dynamics**

snowstorms
GS storms
. storms (meteorology)
. . **snowstorms**
RT climatology
precipitation (meteorology)
storm enhancement
storm suppression
weather forecasting
weather modification

∞ **soaking**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT baths
heat treatment
heating
submerging
water immersion
wetting

soaps
RT detergents
steararates
surfactants
wetting

soaring
RT climbing flight
coasting flight
∞ flight
gliders
gliding
hang gliders
horizontal flight
man powered aircraft
vertical air currents

Sobolev space
DEF A Banach space whose elements are functions defined in a domain in Euclidean space and whose norm measures the size and smoothness of the functions.
GS algebra
. vector spaces
. . Banach space
. . . Hilbert space
. . . . **Sobolev space**
analysis (mathematics)
. function space
. . Banach space
. . . Hilbert space
. . . . **Sobolev space**
. functional analysis
. . Banach space
. . . Hilbert space
. . . . **Sobolev space**
geometry
. topology
. . metric space
. . . Hilbert space
. . . . **Sobolev space**
RT boundary value problems
Euclidean geometry

social factors
GS sociology
. **social factors**
. . ethnic factors
RT anthropology
crime
culture (social sciences)
police
race factors
space psychology
Starsite program
urban planning
urban research
∞ variable

social isolation
GS isolation
. **social isolation**
RT sociology

social psychiatry
GS medical science
. psychiatry
. . **social psychiatry**
RT sociology

sociology
GS **sociology**
. social factors
. . ethnic factors
RT anthropology
case histories
cities
communities
culture (social sciences)
demography
dependence
group dynamics
human relations
minorities
politics
race factors
retirement
social isolation
social psychiatry
systems analysis
urban planning

socks
GS clothing
. **socks**
RT fabrics
shoes

sod
DEF The top stratum of soil usually containing grassy plants with their matted roots.
GS soils
. **sod**
RT canopies (vegetation)
farmlands
grasses
grasslands
land
plowing

sodalite
RT chemical reactions
photochemical reactions
photochromism

sodar
DEF Sound detection and ranging.
RT acoustic scattering
atmospheric temperature
∞ instruments
measuring instruments
meteorological instruments
meteorology
sound detecting and ranging
temperature measurement

sodium
GS chemical elements
. alkali metals
. . **sodium**
. . . liquid sodium
. . . sodium isotopes
. . . . sodium 22
. . . . sodium 24
. . . sodium vapor
metals
. alkali metals
. . **sodium**
. . . liquid sodium
. . . sodium isotopes
. . . . sodium 22
. . . . sodium 24
. . . sodium vapor
RT dawsonite
electrolyte metabolism
liquid metal cooled reactors

sodium 22
GS chemical elements
. alkali metals

. . sodium
. . . sodium isotopes
. . . . **sodium 22**
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . **sodium 22**
. . . sodium isotopes
. . . . **sodium 22**
metals
. alkali metals
. . sodium
. . . sodium isotopes
. . . . **sodium 22**

sodium 24
GS chemical elements
. alkali metals
. . sodium
. . . sodium isotopes
. . . . **sodium 24**
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . **sodium 24**
. . . sodium isotopes
. . . . **sodium 24**
metals
. alkali metals
. . sodium
. . . sodium isotopes
. . . . **sodium 24**

sodium alloys
GS alloys
. **sodium alloys**

sodium azides
GS nitrogen compounds
. azides (inorganic)
. . **sodium azides**
. azides (organic)
. . **sodium azides**
sodium compounds
. **sodium azides**
RT detonators
explosives

sodium bromides
GS halogen compounds
. bromine compounds
. . bromides
. . . **sodium bromides**
. halides
. . bromides
. . . **sodium bromides**
. . metal halides
. . . alkali halides
. . . . **sodium bromides**
sodium compounds
. **sodium bromides**

sodium carbonates
GS carbon compounds
. carbonates
. . **sodium carbonates**
sodium compounds
. **sodium carbonates**
RT dawsonite

sodium chlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . **sodium chlorides**
. halides
. . chlorides
. . . **sodium chlorides**
. . metal halides
. . . alkali halides
. . . . **sodium chlorides**
sodium compounds
. **sodium chlorides**
RT molten salts
salt beds
∞ **salts**

sodium chlorodifluoroacetates
GS acetates
. **sodium chlorodifluoroacetates**
esters
. **sodium chlorodifluoroacetates**

sodium chromites
GS chromium compounds
. **sodium chromites**
sodium compounds
. **sodium chromites**

sodium compounds
GS **sodium compounds**
. cryolite
. Nembutal (trademark)
. nepheline
. sodium azides
. sodium bromides
. sodium carbonates
. sodium chlorides
. sodium chromites
. sodium fluorides
. sodium gallates
. sodium hydrides
. sodium hydroxides
. sodium iodides
. sodium nitrates
. sodium peroxides
. sodium salicylates
. sodium silicates
. . spodumene
. . talc
. . tourmaline
. sodium sulfates
. sodium sulfites
RT ∞ alkali metal compounds
bioedite
∞ chemical compounds
∞ metal compounds

sodium cooling
SN (COOLING WITH SODIUM)
GS cooling
. **sodium cooling**
RT coolants
liquid cooled reactors
liquid cooling

sodium fluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **sodium fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **sodium fluorides**
. . metal halides
. . . alkali halides
. . . . **sodium fluorides**
. . . metal fluorides
. . . . **sodium fluorides**
sodium compounds
. **sodium fluorides**

sodium gallates
GS gallium compounds
. gallates
. . **sodium gallates**
sodium compounds
. **sodium gallates**

sodium graphite reactors
UF *SGR (nuclear reactors)*
GS nuclear reactors
. liquid cooled reactors
. . liquid metal cooled reactors
. . . **sodium graphite reactors**
RT Hallam Nuclear Power Facility
nuclear power reactors

sodium hydrides
GS hydrogen compounds
. hydrides
. . metal hydrides
. . . **sodium hydrides**
sodium compounds
. **sodium hydrides**

sodium hydroxides
GS bases (chemical)
. alkalies
. . **sodium hydroxides**
hydroxides
. **sodium hydroxides**
sodium compounds
. **sodium hydroxides**

sodium iodides
GS halogen compounds
. halides
. . metal halides
. . . alkali halides
. . . . **sodium iodides**
. iodine compounds
. . iodides
. . . **sodium iodides**
sodium compounds
. **sodium iodides**

sodium isotopes
GS chemical elements
. alkali metals
. . sodium
. . . **sodium isotopes**
. . . . sodium 22
. . . . sodium 24
. nuclides
. . isotopes
. . . **sodium isotopes**
. . . . sodium 22
. . . . sodium 24
metals
. alkali metals
. . sodium
. . . **sodium isotopes**
. . . . sodium 22
. . . . sodium 24

sodium nitrates
GS nitrogen compounds
. nitrates
. . inorganic nitrates
. . . **sodium nitrates**
sodium compounds
. **sodium nitrates**

sodium peroxides
GS chalcogenides
. oxides
. . anhydrides
. . . peroxides
. . . . **sodium peroxides**
. . metal oxides
. . . **sodium peroxides**

sodium compounds
. **sodium peroxides**

sodium reactor experiment
UF *SRE reactor*
GS nuclear reactors
. liquid cooled reactors
. . liquid metal cooled reactors
. . . **sodium reactor experiment**
. nuclear research and test reactors
. . **sodium reactor experiment**

sodium salicylates
GS **esters**
. **sodium salicylates**
salicylates
. **sodium salicylates**
sodium compounds
. **sodium salicylates**

sodium silicates
GS silicon compounds
. silicates
. . **sodium silicates**
. . . spodumene
. . . talc
. . . tourmaline
sodium compounds
. **sodium silicates**
. . spodumene
. . talc
. . tourmaline
RT minerals

sodium sulfates
DEF Sodium compounds containing the –SO4 group.
GS sodium compounds
. **sodium sulfates**
sulfur compounds
. sulfates
. . **sodium sulfates**

sodium sulfites
GS sodium compounds
. **sodium sulfites**
sulfur compounds
. sulfites
. . **sodium sulfites**

sodium sulfur batteries
DEF One of several types of rechargeable batteries under consideration as power sources for electrically actuated vehicles. This battery uses a solid electrolyte as well as a sodium reservoir made of metal.
GS electric generators
. direct power generators
. . primary batteries
. . . **sodium sulfur batteries**
electrochemical cells
. electric batteries
. . primary batteries
. . . **sodium sulfur batteries**
RT ∞ electric cells

sodium vapor
GS chemical elements
. alkali metals
. . sodium
. . . **sodium vapor**
metals
. alkali metals
. . sodium
. . . **sodium vapor**
. metal vapors
. . **sodium vapor**
vapors
. metal vapors
. . **sodium vapor**
RT mercury vapor

SOFAR
USE **sound fixing and ranging**

SOFIA (airborne observatory)
(added March 1990)
SN (STRATOSPHERIC OBSERVATORY FOR INFRARED ASTRONOMY)
UF *Stratospheric Observatory for IR Astronomy*
GS observatories
. astronomical observatories
. . **SOFIA (airborne observatory)**
RT airborne equipment
Boeing 747 aircraft
infrared astronomy
Kuiper Airborne Observatory
spaceborne astronomy

soft landing
SN (SPACECRAFT OR AIRCRAFT)
DEF The act of landing on the surface of a planet or natural satellite without damage to any portion of the vehicle or payload except possibly the landing gear. Used for soft recovery.
UF *soft recovery*
GS landing
. **soft landing**
RT aircraft landing
∞ astronautics
crash landing
glide landings
hard landing
horizontal spacecraft landing
lunar landing
Mars landing
planetary landing
spacecraft landing
Surveyor project
Viking 1975 entry vehicle
water landing

soft landing spacecraft
UF *SLV (soft landing vehicles)*
GS **soft landing spacecraft**
. aerospace planes
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . X-30 vehicle
. Apollo spacecraft
. . Apollo lunar experiment module
. Astro vehicle
. Buran space shuttle
. Gemini B spacecraft
. Gemini spacecraft
. . Gemini 2 spacecraft
. . Gemini (GT-1) spacecraft
. Janus spacecraft
. landing modules
. . lunar landing modules
. . . Lunar Module
. . . . Apollo lunar experiment module
. . . . LSSM
. . . . Lunar Module 5
. . . . Lunar Module 7
. . Mars Excursion Module
. Mercury spacecraft
. . Aurora 7
. . Faith 7
. . Friendship 7
. . SIGMA 7
. Surveyor lunar probes
. . Surveyor 1 lunar probe
. . Surveyor 2 lunar probe
. . Surveyor 3 lunar probe
. . Surveyor 4 lunar probe
. . Surveyor 5 lunar probe
. . Surveyor 6 lunar probe
. . Surveyor 7 lunar probe
. voskhod manned spacecraft
. . Voskhod 1 spacecraft
. . Voskhod 2 spacecraft
. Vostok spacecraft
. . Vostok 1 spacecraft
. . Vostok 2 spacecraft
. . Vostok 3 spacecraft
. . Vostok 4 spacecraft
. . Vostok 5 spacecraft
. . Vostok 6 spacecraft
RT Apollo project
ferry spacecraft
hovering rocket vehicles
lunar probes
reusable spacecraft
space capsules
∞ spacecraft
spacecraft landing
Surveyor project
X-20 aircraft

soft recovery
USE **soft landing**

softening
SN (EXCLUDES WATER SOFTENING)
GS **softening**
. work softening
RT annealing
deionization
demineralizing
digesting
dissolving
hardening (materials)
ion exchanging

softness
RT ductility
elastic properties
flexibility
hardness
stiffness

software (computers)
USE **computer programs**

software development tools
DEF Computer programs that aid in the specification, construction, testing, analysis, managment, documentation, and maintenance of other computer programs.
UF *software tools*
GS computer programs
. **software development tools**
tools
. **software development tools**
RT applications programs (computers)
architecture (computers)
computer systems design
object-oriented programming
program verification (computers)
programming environments
reverse engineering
scientific visualization
software engineering
software reuse

software engineering
DEF The systematic approach to the development, operation, maintenance, and retirement of software.
RT computer programming
computer programs
computer systems design

computer systems programs
computer viruses
data bases
∞ engineering
object-oriented programming
programming environments
reverse engineering
software development tools
software reliability
software reuse
structured programming
systems engineering
UNIX (operating system)

software engineering environments
USE **programming environments**

software reliability
(added January 1993)
UF *computer program reliability*
program reliability (computers)
GS reliability
. **software reliability**
. . computer program integrity
RT computer programming
computer programs
computer systems performance
program verification (computers)
reliability analysis
software engineering
systems health monitoring

software reuse
(added May 1992)
GS utilization
. reuse
. . **software reuse**
RT computer programming
computer programs
productivity
software development tools
software engineering

software tools
USE **software development tools**

SOHO Mission
(added September 1989)
DEF One of the joint NASA/ESA missions comprising the International Solar Terrestrial Program. The SOHO Mission will investigate the physical processes in the solar corona and solar wind and the structure and dynamics of the solar interior.
UF *Solar and Heliospheric Observatory*
GS space missions
. **SOHO Mission**
RT Cluster Mission
ESA satellites
European space programs
heliosphere
international cooperation
∞ missions
scientific satellites
solar corona
solar interior
solar observatories
solar wind

SOI (semiconductors)
DEF Semiconductor devices consisting of a silicon layer coupled to an electrically insulating layer. Used for silicon-on-insulator semiconductors.
UF *silicon-on-insulator semiconductors*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **SOI (semiconductors)**
RT field effect transistors
metal oxide semiconductors
silicon films
silicon junctions
silicon transistors
SIS (semiconductors)
SOS (semiconductors)

soil contamination
USE **soil pollution**

soil erosion
GS erosion
. **soil erosion**
RT abrasion
atmospheric effects
deterioration
environment effects
hydrogeology
landslides
outliers (landforms)
rain erosion
rain impact damage
soils
water erosion
weathering
wind effects

soil mapping
GS mapping
. **soil mapping**
RT geographic applications program
ground penetrating radar
maps
photomapping
soils
SPOT (French satellite)
surveys
terrain analysis

soil mechanics
DEF Mechanical properties of unconsolidated accumulations of particles produced by the disintegration and chemical decomposition of rocks.
RT crustal fractures
fracture mechanics
geotechnical engineering
geotechnical fabrics
rock mechanics

soil moisture
GS moisture
. **soil moisture**
RT lysimeters
moisture content
plant stress
soil sampling
soils
vegetation growth

soil pollution
(added September 1995)
UF *soil contamination*
GS pollution
. environment pollution
. . **soil pollution**
RT contaminants
ground water
industrial wastes
pollution monitoring
radioactive wastes
sediments
toxicity and safety hazard
waste disposal
water pollution

soil sampling
(added March 1995)
GS sampling
. **soil sampling**
RT alkalinity
Mars surface samples
pH factor
salinity
soil moisture
terrain analysis

soil science
UF *pedology*
RT agriculture
conservation
erosion
soils
vegetation growth

soils
GS **soils**
. alluvium
. dirt
. gravels
. laterites
. lunar soil
. . lunar dust
. mud
. permafrost
. sands
. . monazite sands
. . tar sands
. sod
RT andesite
anorthosite
arid lands
ataxite
barren land
basalt
bedrock
bentonite
boreholes
breccia
carbonaceous rocks
clays
coal
conservation
cultivation
deltas
diorite
dunite
Earth resources
eclogite
enstatite
formations
geology
gneiss
granite
igneous rocks
illite
kaolinite
land
landslides
lava
limestone
lysimeters
magma
minerals
moldavite
muskegs
obsidian
olivine
peridotite
planting
polyurethane foam
porous materials
pumice

pyroxenes
quartz
rocks
sandstones
sedimentary rocks
serpentine
shales
soil erosion
soil mapping
soil moisture
soil science
strip mining
syenite
trachyte
tunneling (excavation)
vadose water
vegetation growth

soi-gel processes
RT alkoxides
ceramic nuclear fuels
nuclear fuels
∞ processes
xerogels

solar activity
DEF Any type of variation in the appearance of energy output of the sun.
GS stellar activity
. **solar activity**
. . faculae
. . solar flares
. . solar prominences
. . solar storms
. . spicules
. . sunspots
RT ∞ activity
auroras
∞ disturbances
International Quiet Sun Year
IRIS satellites
magnetic disturbances
prominences
radio auroras
solar convection (astronomy)
solar interior
solar planetary interactions
starspots
sun
sunspot cycle

solar activity effects
RT blackout (propagation)
∞ effects
galactic cosmic rays
heliosphere
magnetic disturbances
secular variations
solar oscillations
solar planetary interactions
sudden ionospheric disturbances
sudden storm commencements
sun

Solar and Heliospheric Observatory
USE **SOHO Mission**

solar arrays
UF *rollup solar arrays*
GS arrays
. **solar arrays**
. . solar blankets
RT electrostatic bonding
payload delivery (STS)
photovoltaic conversion
power modules (STS)
satellite power transmission
self shadowing
solar atriums
space station power supplies
sun

solar atmosphere
GS environments
. extraterrestrial environments
. . stellar atmospheres
. . . **solar atmosphere**
. . . . solar transition region
RT ∞ atmospheres
chromosphere
M region
photosphere
solar convection (astronomy)
solar oscillations
spicules
stellar structure
sun

solar atriums
DEF Open courts within buildings designed for passive solar heating.
RT solar arrays
solar heating
solar reflectors
space heating (buildings)
sun

solar auxiliary power units
GS auxiliary power sources
. **solar auxiliary power units**
. . ASTEC solar turboelectric generator
electric generators
. solar generators
. . **solar auxiliary power units**
. . . ASTEC solar turboelectric generator
RT sun

solar azimuth
USE **azimuth**
solar position

Solar Backscatter UV Spectrometer
DEF A spaceborne spectrometer that measures solar UV spectral irradiance incident on the Earth and backscattered radiance from the Earth and thereby estimates the total atmospheric ozone content of the atmosphere and the altitude distribution of ozone.
GS measuring instruments
. spectrometers
. . **Solar Backscatter UV Spectrometer**
RT irradiance
NOAA 11 satellite
NOAA 14 satellite
satellite-borne instruments

solar blankets
DEF Large, high-temperature, low-mass solar arrays consisting of ultrathin silicon solar cells interconnected, welded, and bonded to flexible substances.
GS arrays
. solar arrays
. . **solar blankets**
electric generators
. direct power generators
. . thermionic converters
. . . **solar blankets**
RT ∞ blankets
∞ converters
sun

Solar Cell Calibration Facility
DEF One of the spacelab payloads. Used for SCCF.
UF *SCCF*
GS payloads
. Spacelab payloads
. . **Solar Cell Calibration Facility**
RT calibrating
∞ facilities
Space Transportation System flights

solar cells
DEF Photovoltaic cells that convert sunlight into electrical energy. Used for silicon solar cells and wraparound contact solar cells.
UF *silicon solar cells*
wraparound contact solar cells
GS electric generators
. direct power generators
. . photoelectric generators
. . . photovoltaic cells
. . . . **solar cells**
. . . . . vertical junction solar cells
. solar generators
. . **solar cells**
. . . vertical junction solar cells
electronic equipment
. solid state devices
. . semiconductor devices
. . . photovoltaic cells
. . . . **solar cells**
. . . . . vertical junction solar cells
photoelectric cells
. photovoltaic cells
. . **solar cells**
. . . vertical junction solar cells
RT amorphous silicon
antireflection coatings
carrier lifetime
carrier transport (solid state)
∞ cells
copper indium selenides
diffusion length
∞ electric cells
electrostatic bonding
float zones
fuel cells
heterojunctions
homojunctions
indium selenides
open circuit voltage
photodiodes
photovoltaic conversion
p-i-n junctions
quantum efficiency
satellite power transmission
satellite solar energy conversion
satellite solar power stations
short circuit currents
SIS (semiconductors)
solar powered aircraft
space station power supplies
spectrophotovoltaics
sun
thermionic converters
thermoelectric generators
thermophotovoltaic conversion
tunnel junctions

solar collectors
DEF Devices designed to absorb incident solar radiation and transfer the energy to a fluid passing through it. Used for solar receivers.
UF *solar receivers*
GS accumulators
solar collectors
reflectors

. solar reflectors
. . **solar collectors**
RT concentrators
mirrors
photothermal conversion
selective surfaces
solar dynamic power systems
space cooling (buildings)
spectrophotovoltaics
sun

solar companion star
USE **Nemesis (star)**

solar compasses
GS measuring instruments
. indicating instruments
. . compasses
. . . **solar compasses**
navigation aids
. navigation instruments
. . compasses
. . . **solar compasses**
RT air navigation
air traffic control
aircraft safety
airport beacons
all-weather air navigation
approach indicators
automatic flight control
automatic pilots
beacons
Decca navigation
display devices
distance measuring equipment
flight control
flight instruments
flight paths
gyrocompasses
heliports
homing devices
landing aids
loran
magnetic compasses
omnidirectional radio ranges
position indicators
radar beacons
radio beacons
radio navigation
self calibrating omnirange
Shoran
sun
Tacan
VHF omnirange navigation
weather

solar constant
DEF The rate at which solar radiation is received outside the Earth's atmosphere on a surface normal to the incident radiation and at the Earth's mean distance from the sun.
GS constants
. **solar constant**
rates (per time)
. flux density
. . radiant flux density
. . . irradiance
. . . . **solar constant**
. . . solar flux density
. . . . **solar constant**
RT illuminance
particle flux density
sun

solar convection (astronomy)
(added June 1992)
SN (LIMITED TO CONVECTION PHENOMENA OF THE SOLAR ATMOSPHERE AND INTERIOR)
GS convection
. stellar convection
. . **solar convection (astronomy)**
RT Benard cells
convection currents
convective flow
dynamo theory
fluid flow
free convection
Rayleigh-Benard convection
solar activity
solar atmosphere
solar interior
solar magnetic field
solar physics

solar converters
USE **solar generators**

solar cooling
DEF Conversion of solar energy into refrigeration energy.
GS cooling
. **solar cooling**
RT cooling systems
domestic energy
energy technology
residential energy
space cooling (buildings)
sun

solar corona
UF *solar nebula*
GS coronas
. stellar coronas
. . **solar corona**
. . . coronal holes
. . . coronal loops
RT chromosphere
coronal mass ejection
electric corona
magnetic clouds
nebulae
SOHO Mission
solar transition region
stellar structure
sun

solar corpuscular radiation
UF *solar streams*
GS extraterrestrial radiation
. solar radiation
. . **solar corpuscular radiation**
. . . solar electrons
. . . solar neutrinos
. . . solar neutrons
. . . solar protons
particles
. corpuscular radiation
. . **solar corpuscular radiation**
. . . solar electrons
. . . solar neutrinos
. . . solar neutrons
. . . solar protons
RT M region
∞ radiation
solar planetary interactions
sudden storm commencements
sun

solar cosmic rays
DEF Cosmic rays supposedly originating in the sun.
GS extraterrestrial radiation
. primary cosmic rays
. . **solar cosmic rays**
. solar radiation
. . **solar cosmic rays**
ionizing radiation
. cosmic rays
. . primary cosmic rays
. . . **solar cosmic rays**
particles
. corpuscular radiation
. . primary cosmic rays
. . . **solar cosmic rays**
RT electron acceleration
energetic particles
GRIST (telescope)
sun

solar cycles
GS cycles
. **solar cycles**
. . sunspot cycle
RT International Quiet Sun Year
IRIS satellites
secular variations
sun
sunspots
twenty-seven day variation

solar diameter
DEF Observable dimension of the sun.
RT astrometry
∞ science
solar eclipses

solar disk
USE **sun**

solar dynamic power systems
DEF Electric power systems using a solar heated working fluid to drive a turboalternator. Primary applications are for space stations and spacecraft.
GS electric generators
. solar generators
. . **solar dynamic power systems**
electric power supplies
. **solar dynamic power systems**
RT Brayton cycle
heat storage
photothermal conversion
Rankine cycle
solar collectors
solar energy conversion
solar thermal electric power plants
space station power supplies
spacecraft power supplies
Stirling cycle

solar dynamics
USE **helioseismology**

solar eclipses
DEF Obscurations of the light of the sun by the moon.
GS eclipses
. **solar eclipses**
occultation
. lunar occultation
. . **solar eclipses**
RT lunar shadow
solar diameter
sun

solar electric propulsion
GS propulsion
. electric propulsion
. . **solar electric propulsion**
. low thrust propulsion
. . solar propulsion
. . . **solar electric propulsion**
. spacecraft propulsion
. . solar propulsion
. . . **solar electric propulsion**
RT solar powered aircraft
solar thermal propulsion
space station propulsion
sun

solar electrons
GS extraterrestrial radiation
. solar radiation
. . solar corpuscular radiation
. . . **solar electrons**
particles
. charged particles
. . energetic particles
. . . electrons
. . . . **solar electrons**
. corpuscular radiation
. . energetic particles
. . . electrons
. . . . **solar electrons**
. . solar corpuscular radiation
. . . **solar electrons**
. elementary particles
. . fermions
. . . leptons
. . . . electrons
. . . . . **solar electrons**
RT sun

solar energy
DEF The radiant energy originating from the sun. Approximately 99% of solar energy lies between the wavelengths of 300 to 3,500 nm.
RT circumsolar telescopes
clean energy
∞ energy
energy absorption films
IRIS satellites
phase change materials
solar thermal electric power plants
solettas
sun

solar energy absorbers
GS absorbers (materials)
. **solar energy absorbers**
RT electromagnetic absorption
photothermal conversion
selective surfaces
sun
Trombe walls

solar energy conversion
GS energy conversion
. **solar energy conversion**
. . photothermal conversion
. . . thermophotovoltaic conversion
. . photovoltaic conversion
. . . thermophotovoltaic conversion
. . solar total energy systems
RT cogeneration
∞ conversion
energy technology
heterojunction devices
hydrogen production
phase change materials
photoelectric generators
photoelectrochemical devices
solar dynamic power systems
solar-pumped lasers
space cooling (buildings)
sun

solar faculae
USE **faculae**

solar flares
DEF A rapid release of electromagnetic (visible, radio, ultraviolet, x ray) and particulate (protons, electrons) energy from the sun. Flares are classified according to the optically observed area of the solar surface covered, ranging from zero for the smallest to 3 for the largest, and their intensity, either faint, normal, or brilliant.
GS stellar activity
. solar activity
. . **solar flares**
. stellar flares
. . **solar flares**
RT coronal loops
coronal mass ejection
flare stars
∞ flares
∞ flash
Forbush decreases
force-free magnetic fields
IRIS satellites
magnetic disturbances
Solar Maximum Mission
solar neutrons
sudden storm commencements
sun
sunspots

solar flux
SN (LIMITED TO ENERGY OR PARTICLES EMITTED FROM THE SUN PER UNIT TIME—SEE SOLAR FLUX DENSITY FOR ENERGY OR PARTICLE EMISSION OR DETECTION RATE PER UNIT AREA)
GS rates (per time)
. flux (rate)
. . **solar flux**
RT heat flux
limb brightening
sun

solar flux density
SN (LIMITED TO SOLAR ENERGY OR PARTICLE EMISSION OR DETECTION RATE UNIT AREA—SEE SOLAR FLUX FOR EMISSION RATE PER UNIT TIME)
GS rates (per time)
. flux density
. . radiant flux density
. . . **solar flux density**
. . . . solar constant
RT electron flux density
Helios satellites
illuminance
irradiance
limb brightening
luminance
luminous intensity
particle flux density
proton flux density
radiance
radiancy
radiation pressure
sun

solar furnaces
GS heating equipment
. furnaces
. . **solar furnaces**
RT Forbush decreases
melting
sun
vacuum furnaces

solar generators
UF *solar converters*
solar power generation
solar power sources
GS electric generators
. **solar generators**
. . solar auxiliary power units
. . . ASTEC solar turboelectric generator
. . solar cells
. . . vertical junction solar cells
. . solar dynamic power systems
RT direct power generators
fuel cells
paddles
photoelectric cells
photoelectric generators
photovoltaic cells
∞ power supplies
Rankine cycle
solar sea power plants
sun
thermoelectric generators
turbogenerators

solar granulation
GS photosphere
. **solar granulation**
RT Benard cells
brightness distribution
convection currents
limb brightening
sun
surface layers
temperature effects

solar gravitation
UF *evection*
GS gravitation
. stellar gravitation
. . **solar gravitation**
RT sun

solar heating
GS heating
. **solar heating**
RT bioconversion
hydrothermal systems
insolation
phase change materials
radiant heating
residential energy
solar atriums
space heating (buildings)
sun
sunlight
Trombe walls

solar houses
DEF Habitable buildings designed with large expanses of glass or other transparent materials to collect solar radiation for heating.
RT buildings
domestic energy
energy technology
heat storage
residential energy
space heating (buildings)
sun
Trombe walls

solar instruments
GS **solar instruments**
. spectroheliographs
RT celescopes
filtergrams

optical measuring instruments
radiation measuring instruments
solar optical telescope
spectrometers
sun
telescopes

solar interior
GS stellar interiors
. **solar interior**
RT helioseismology
SOHO Mission
solar activity
solar convection (astronomy)
solar physics
stellar cores
stellar structure
sun

solar lasers
USE **solar-pumped lasers**

solar limb
RT coronal loops
limb brightening
limb darkening
∞ limbs
planetary limb
sun

solar longitude
GS longitude
. **solar longitude**
RT astronomical coordinates
celestial reference systems
sun

solar magnetic field
UF *heliomagnetism*
GS magnetic fields
. stellar magnetic fields
. . **solar magnetic field**
RT electromagnetic fields
force-free magnetic fields
interplanetary magnetic fields
magnetic field reconnection
solar convection (astronomy)
sun

Solar Maximum Mission
DEF Use of the multimission modular spacecraft for the study of solar particles, emissions, and flares.
GS space missions
Solar Maximum Mission
. Solar Maximum Mission-A
RT ∞ flares
flux density
gamma ray spectrometers
∞ missions
multimission modular spacecraft
polarimeters
programs
solar flares
space programs
sun
ultraviolet spectrometers
Ulysses mission

Solar Maximum Mission-A
DEF The solar maximum mission spacecraft. Used for SMM-A.
UF *SMM-A*
GS space missions
. Solar Maximum Mission
. . **Solar Maximum Mission-A**
RT ∞ missions
space exploration
∞ spacecraft
sun

Solar Mesosphere Explorer
DEF A satellite whose experiments provided a comprehensive study of atmospheric ozone and the processes which form and destroy it. The satellite was launched in October of 1981. On May 15, 1989, the mission was terminated due to battery problems.
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **Solar Mesosphere Explorer**
RT atmospheric composition
mesosphere
ozone
sun

solar nebula
USE **solar corona**

solar neighborhood
DEF The portion of the Milky Way Galaxy centering around the sun and containing the nearest neighboring stars.
RT astronomy
celestial bodies
local group (astronomy)
Milky Way Galaxy
Nemesis (star)
solar system
star clusters
stars
sun

solar neutrinos
DEF Neutral particles originating from nuclear reactions in the core of the sun.
GS extraterrestrial radiation
. solar radiation
. . solar corpuscular radiation
. . . **solar neutrinos**
particles
. corpuscular radiation
. . solar corpuscular radiation
. . . **solar neutrinos**
. elementary particles
. . fermions
. . . leptons
. . . . neutrinos
. . . . . **solar neutrinos**
RT astronomical models
astrophysics
nuclear reactions
stellar models
sun

solar neutrons
GS extraterrestrial radiation
. solar radiation
. . solar corpuscular radiation
. . . **solar neutrons**
particles
. corpuscular radiation
. . solar corpuscular radiation
. . . **solar neutrons**
. elementary particles
. . fermions
. . . neutrons
. . . . **solar neutrons**
. neutral particles
. . neutrons
. . . **solar neutrons**
RT neutron flux density
solar flares

solar noise
USE **solar radio emission**

solar oblateness
RT oblate spheroids
sun

solar observatories
GS observatories
. astronomical observatories
. . **solar observatories**
. . . OSO
. . . . AOSO
. . . . OSO-1
. . . . OSO-2
. . . . OSO-3
. . . . OSO-4
. . . . OSO-5
. . . . OSO-6
. . . . OSO-7
. . . . OSO-8
. . . . OSO-C
. . . Pinhole Occulter Facility
RT coronagraphs
SOHO Mission
sun

solar optical telescope
DEF A 1-M class, high resolution solar telescope which NASA had planned to operate on the Shuttle Spacelab during the mid and late 1980s. Used for SOT.
UF *SOT*
GS telescopes
. spaceborne telescopes
. . **solar optical telescope**
RT solar instruments
solar physics

solar orbits
SN (RESTRICTED TO ORBITS AROUND THE SUN)
UF *heliocentric orbits*
planetary motion
GS orbits
. **solar orbits**
RT aphelions
circular orbits
∞ Earth motion
ecliptic
elliptical orbits
HEOS satellites
interplanetary trajectories
∞ motion
orbital resonances (celestial mechanics)
perihelions
protoplanets
spacecraft orbits
sun
transfer orbits

solar oscillations
DEF Irregular oscillations in the solar atmosphere.
GS oscillations
. stellar oscillations
. . **solar oscillations**
stellar motions
. stellar oscillations
. . **solar oscillations**
RT astronomical models
atmospheric models
cataclysmic variables
solar activity effects
solar atmosphere
stellar models
sun

variable stars

solar parallax
DEF The angle at the sun subtended by the equatorial diameter of the Earth.
GS parallax
. **solar parallax**
RT astronomy
stellar parallax
sun

solar physics
GS astrophysics
. stellar physics
. . **solar physics**
RT filtergrams
helioseismology
International Quiet Sun Year
photosphere
∞ physics
plasmas (physics)
∞ science
solar convection (astronomy)
solar interior
solar optical telescope
Spartan satellites
sun

solar planetary interactions
DEF The interactions and subsequent effects caused by the interactions of solar activity and/or wind with a planet, its magnetic field, its atmosphere, or natural satellites.
GS **solar planetary interactions**
. solar terrestrial interactions
RT Earth magnetosphere
magnetic disturbances
magnetosheath
planetary atmospheres
planetary magnetic fields
planetary magnetospheres
planetary magnetotails
plasma interactions
solar activity
solar activity effects
solar corpuscular radiation
solar wind
solar wind velocity

solar plasma (radiation)
USE **solar wind**

solar ponds (heat storage)
DEF Large, shallow ponds covered with thin, transparent plastic shields and used for collecting and storing solar heat for conversion to electric power.
RT electric generators
energy conversion
ponds
reservoirs
sun

solar position
UF *solar azimuth*
GS position (location)
. **solar position**
RT astrolabes
celestial navigation
equinoxes
seasons
solstices
sun
zenith

solar power generation
USE **solar generators**

solar power satellites
DEF Proposed very large space structures consisting of hundreds of square miles of solar thermal collectors and/or photovoltaic converters constructed or assembled in space. Power would be transmitted to Earth in microwave form.
GS artificial satellites
. **solar power satellites**
RT large space structures
power beaming
satellite power transmission
sun

solar power sources
USE **solar generators**

solar powered aircraft
DEF Aircraft powered by solar energy.
RT ∞ aircraft
solar cells
solar electric propulsion
solar propulsion
sun

solar probes
GS unmanned spacecraft
. space probes
. . **solar probes**
. . . Helios 1
. . . Helios 2
. . . Helios A
. . . Helios B
. . . Starprobe spacecraft
. . . Sunblazer space probe
RT Helios Project
Pioneer space probes
sun
Ulysses mission

solar prominences
DEF Filamentlike protuberances from the chromosphere of the sun. Used for filaments (solar physics).
UF *filaments (solar physics)*
GS prominences
. **solar prominences**
stellar activity
. solar activity
. . **solar prominences**
RT chromosphere
sun

solar propulsion
GS propulsion
. low thrust propulsion
. . **solar propulsion**
. . . solar electric propulsion
. . . solar thermal propulsion
. spacecraft propulsion
. . **solar propulsion**
. . . solar electric propulsion
. . . solar thermal propulsion
RT solar powered aircraft
sun

solar protons
GS extraterrestrial radiation
. solar radiation
. . solar corpuscular radiation
. . . **solar protons**
particles
. charged particles
. . protons
. . . **solar protons**
. corpuscular radiation
. . solar corpuscular radiation
. . . **solar protons**
. elementary particles
. . fermions
. . . protons
. . . . **solar protons**
RT baryons
sun

solar radar echoes
GS echoes
. radar echoes
. . **solar radar echoes**
RT sun

solar radiation
DEF The total electromagnetic radiation emitted by the sun.
GS extraterrestrial radiation
. **solar radiation**
. . circumsolar radiation
. . solar corpuscular radiation
. . . solar electrons
. . . solar neutrinos
. . . solar neutrons
. . . solar protons
. . solar cosmic rays
. . solar radio emission
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. . solar wind
. . solar x-rays
. . sunlight
RT aerospace environments
albedo
atmospheric refraction
circumsolar telescopes
climatology
cloud cover
corpuscular radiation
cosmic noise
cosmic rays
dayglow
electromagnetic radiation
extreme ultraviolet radiation
gegenschein
infrared radiation
insolation
ionizing radiation
IRIS satellites
light (visible radiation)
long wave radiation
longitudinal waves
∞ radiation
radiation belts
radiation pressure
radiative transfer
radio waves
rectennas
sky brightness
solar-pumped lasers
stellar radiation
sun
thermal radiation
ultraviolet radiation
zodiacal light

Solar Radiation 1 satellite
GS artificial satellites
. **Solar Radiation 1 satellite**
RT galactic radiation
∞ radiation
sun

Solar Radiation 3 satellite
GS artificial satellites

. **Solar Radiation 3 satellite**
RT galactic radiation
∞ radiation
sun

solar radiation shielding
GS protection
. radiation protection
. . radiation shielding
. . . **solar radiation shielding**
shielding
. radiation shielding
. . **solar radiation shielding**
RT ∞ radiation
satellite temperature
spacecraft shielding
sun

solar radio bursts
DEF Sudden increases in the flux from the sun at radio frequencies.
GS bursts
. radio bursts
. . **solar radio bursts**
. . . type 2 bursts
. . . type 3 bursts
. . . type 4 bursts
. . . type 5 bursts
electromagnetic radiation
. radio waves
. . extraterrestrial radio waves
. . . radio bursts
. . . . **solar radio bursts**
. . . . . type 2 bursts
. . . . . type 3 bursts
. . . . . type 4 bursts
. . . . . type 5 bursts
. . . solar radio emission
. . . . **solar radio bursts**
. . . . . type 2 bursts
. . . . . type 3 bursts
. . . . . type 4 bursts
. . . . . type 5 bursts
. . radio emission
. . . radio bursts
. . . . **solar radio bursts**
. . . . . type 2 bursts
. . . . . type 3 bursts
. . . . . type 4 bursts
. . . . . type 5 bursts
. . . solar radio emission
. . . . **solar radio bursts**
. . . . . type 2 bursts
. . . . . type 3 bursts
. . . . . type 4 bursts
. . . . . type 5 bursts
emission
. radio emission
. . radio bursts
. . . **solar radio bursts**
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. . solar radio emission
. . . **solar radio bursts**
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
extraterrestrial radiation
. extraterrestrial radio waves
. . radio bursts
. . . **solar radio bursts**
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. . solar radio emission
. . . **solar radio bursts**
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. solar radiation
. . solar radio emission
. . . **solar radio bursts**
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
RT sun

solar radio emission
DEF Radiation at radio frequencies originating from the sun or its corona. Used for solar noise and solar radio waves.
UF *solar noise*
solar radio waves
GS electromagnetic radiation
. radio waves
. . extraterrestrial radio waves
. . . **solar radio emission**
. . . . solar radio bursts
. . . . . type 2 bursts
. . . . . type 3 bursts
. . . . . type 4 bursts
. . . . . type 5 bursts
. radio emission
. . **solar radio emission**
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
emission
. radio emission
. . **solar radio emission**
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
extraterrestrial radiation
. extraterrestrial radio waves
. . **solar radio emission**
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. solar radiation
. . **solar radio emission**
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
RT coronal holes
cosmic noise
decimeter waves
electromagnetic noise
millimeter waves
radio bursts

solar radio waves
USE **solar radio emission**

solar receivers
USE **solar collectors**

solar reflectors
GS reflectors
. **solar reflectors**
. . solar collectors
. . solettas
RT focusing
heat shielding
heliostats
mirrors
parabolic reflectors
paraboloid mirrors
photothermal conversion
radiant flux density
solar atriums
spacecraft radiators
sun

solar rotation
UF *Carrington rotation*
GS gyration
. rotation
. . stellar rotation
. . . **solar rotation**
stellar motions
. stellar rotation
. . **solar rotation**
RT sun
twenty-seven day variation

solar sails
GS sails
. **solar sails**
RT propulsion
space flight
spacecraft propulsion
sun

solar sea power plants
GS electric generators
. direct power generators
. . thermoelectric generators
. . . **solar sea power plants**
RT electric power plants
energy conversion
∞ generators
ocean temperature
ocean thermal energy conversion
∞ power plants
solar generators
sun

solar seismology
USE **helioseismology**

solar selective coatings
USE **selective surfaces**

solar sensors
UF *sun sensors*
RT attitude control
guidance sensors
IRIS satellites
navigation aids
navigation instruments
star trackers
sun
tracking (position)

solar simulation
GS simulation
. **solar simulation**
RT space environment simulation
sun
thermal simulation

solar simulators
DEF Devices which produce thermal energy, equivalent in intensity and spectral distribution to

that from the sun, used in testing materials and space vehicles.
GS simulators
. environment simulators
. . **solar simulators**
RT space simulators
sun
test facilities

solar spectra
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . stellar spectra
. . . . **solar spectra**
RT absorption spectra
astronomical spectroscopy
continuous spectra
coronas
D lines
emission spectra
filtergrams
Fraunhofer lines
H alpha line
H beta line
H gamma line
H lines
infrared spectra
line spectra
Lyman spectra
molecular spectra
oxygen spectra
sun
ultraviolet spectra
visible spectrum
x ray spectra

solar spectrometers
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . **solar spectrometers**
. spectrometers
. . **solar spectrometers**
RT absorption spectra
emission spectra
filter wheel infrared spectrometers
infrared spectrometers
spectrohelographs
sun
ultraviolet spectrometers

solar storms
GS stellar activity
. solar activity
. . **solar storms**
storms
. **solar storms**
RT Forbush decreases
ionospheric storms
magnetic storms
noise storms
sun

solar streams
USE **solar corpuscular radiation**

solar system
DEF The sun and other celestial bodies within its gravitational influence, including planets, asteroids, satellites, comets, and meteors.
GS celestial bodies
. **solar system**
planetary systems
. **solar system**
RT Amalthea
Amor asteroid
Apollo asteroids
Arend–Roland comet
asteroid belts
asteroid capture
asteroids
Brorsen–Metcalf comet
celestial mechanics
Charon
Chiron
comet heads
comet nuclei
comet tails
comets
Earth–Moon system
gas giant planets
Giacobini–Zinner comet
Grigg–Skjellerup comet
Halley's comet
Humason comet
IRAS–Araki–Alcock comet
Jupiter satellites
Kohoutek comet
Kuiper belt
Mercury surface
meteoroids
Morehouse comet
Mrkos comet
natural satellites
Oort cloud
planetary geology
planets
protoplanets
Rhea (astronomy)
Saturn rings
Schwassmann–Wachmann comet
solar neighborhood
solar system evolution
sun
∞ systems
Tempel 2 comet
terrestrial planets
Toro asteroid
Venus surface
Vesta asteroid
Voyager 1977 mission
West comet

solar system evolution
(added January 1991)
DEF The origin and development of the solar system.
GS evolution (development)
. **solar system evolution**
RT Kuiper belt
lunar evolution
planetary evolution
planetary systems
planets
solar system
stellar evolution
sun

solar temperature
GS temperature
. **solar temperature**
RT solar transition region
sun

solar terrestrial interactions
GS solar planetary interactions
. **solar terrestrial interactions**
RT Cluster Mission
corpuscular radiation
Earth magnetosphere
∞ flares
∞ interactions
International Geosphere–Biosphere program
magnetic disturbances
magnetic storms
magnetosheath
storms
sun
sunspots
weather

solar thermal electric power plants
DEF The use of solar energy to generate steam for producing electricity.
GS electric power plants
. **solar thermal electric power plants**
RT photothermal conversion
∞ power plants
solar dynamic power systems
solar energy
thermal energy

solar thermal propulsion
DEF Proposed energy source for spacecraft propulsion by passing hydrogen through a heat exchanger placed at the focal point of a large parabolic dish solar concentrator mirror.
GS propulsion
. low thrust propulsion
. . solar propulsion
. . . **solar thermal propulsion**
. spacecraft propulsion
. . solar propulsion
. . . **solar thermal propulsion**
RT propulsion system performance
solar electric propulsion
sun

solar total energy systems
DEF Systems for converting solar energy directly into electrical and thermal energy.
GS energy conversion
. solar energy conversion
. . **solar total energy systems**
total energy systems
. **solar total energy systems**
RT ∞ conversion
direct power generators
∞ energy
sun
∞ systems

solar transition region
(added September 1993)
DEF A layer of the solar atmosphere only a few hundred miles thick between the chromosphere and the corona across which the temperature rises rapidly from a few times 10(exp 4) K to the order of 10(exp 6) K.
GS environments
. extraterrestrial environments
. . stellar atmospheres
. . . solar atmosphere
. . . . **solar transition region**
RT chromosphere
solar corona
solar temperature

solar velocity
GS rates (per time)
. **solar velocity**
velocity
. **solar velocity**
RT sun

solar wind
DEF Streams of plasma flowing approximately radially outward from the sun. Used for solar plasma (radiation).
UF *solar plasma (radiation)*
GS extraterrestrial radiation

. solar radiation
. . **solar wind**
particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . space plasmas
. . . . . **solar wind**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . space plasmas
. . . . . **solar wind**
RT AMPTE (satellites)
Chapman–Ferraro problem
Cluster Mission
comet tails
coronal holes
coronal mass ejection
cosmic plasma
galactic cosmic rays
Grigg–Skjellerup comet
heliosphere
hydrogen plasma
interplanetary gas
interplanetary medium
M region
magnetic clouds
magnetic sails
magnetopause
magnetosheath
planetary magnetotails
plasmapause
∞ radiation
radiation pressure
SOHO Mission
solar planetary interactions
stellar winds
sun

solar wind velocity
GS dynamic characteristics
. flow characteristics
. . flow velocity
. . . **solar wind velocity**
rates (per time)
. flow velocity
. . **solar wind velocity**
. wind velocity
. . **solar wind velocity**
velocity
. flow velocity
. . **solar wind velocity**
. wind velocity
. . **solar wind velocity**
RT alpha particles
Earth magnetosphere
magnetic disturbances
magnetohydrodynamic flow
solar planetary interactions
stellar winds
sun
velocity measurement

solar x-rays
GS electromagnetic radiation
. x rays
. . **solar x-rays**
extraterrestrial radiation
. solar radiation
. . **solar x-rays**
ionizing radiation
. x rays
. . **solar x-rays**
RT coronal holes
sun

solar-pumped lasers
UF *solar lasers*
GS stimulated emission devices
. lasers
. . **solar-pumped lasers**
RT laser pumping
optical pumping
solar energy conversion
solar radiation

soldered joints
GS joints (junctions)
. metal joints
. . **soldered joints**
RT beam leads
bonded joints
butt joints
lap joints
soldering

soldering
GS **soldering**
. ultrasonic soldering
RT bonding
. brazing
fluxes
heat affected zone
∞ joining
laser welding
low temperature brazing
metal bonding
metal–metal bonding
sealing
soldered joints
solders
welding

solders
GS alloys
. **solders**
RT lead alloys
sealers
soldering
tin alloys
zinc alloys

solenoid valves
GS valves
. **solenoid valves**
RT automatic control valves
electric control
∞ electric equipment
electric relays
electric switches
hydraulic control
off–on control
solenoids

solenoids
SN (EXCLUDES METEOROLOGICAL SOLENOIDS)
RT actuators
electric relays
electromagnets
magnet coils
solenoid valves
toroidal plasmas

solettas
DEF Orbiting solar mirrors (reflectors).
GS mirrors
. **solettas**
reflectors
. solar reflectors
. . **solettas**
RT ∞ platforms
solar energy
∞ spacecraft

solid argon
USE **solidified gases**

solid cryogen cooling
DEF Cooling with solidified cryogenic fluids.
GS cooling
. **solid cryogen cooling**
RT cryogenic fluids
cryogenics
liquefied gases

solid cryogens
DEF Solidified cryogenic fluids.
GS gases
. solidified gases
. . **solid cryogens**
. . . solid nitrogen
solids
. solidified gases
. . **solid cryogens**
. . . solid nitrogen
RT cooling systems
cryogenic equipment
cryogenics
liquid nitrogen

solid electrodes
GS electrodes
. **solid electrodes**
RT transconductance

solid electrolytes
DEF Single crystals, certain alloys, alkaline metals, and other compact compounds used in galvanic cells (batteries).
GS conductors
. electrolytes
. . **solid electrolytes**
RT solid oxide fuel cells

solid lubricants
SN (EXCLUDES SEMISOLIDS SUCH AS GREASES)
GS lubricants
. **solid lubricants**
RT binders (materials)
gas lubricants
graphite
self lubricating materials

solid mechanics
RT continuum mechanics
finite element method
mechanical properties
∞ mechanics (physics)
∞ science
solids
structural analysis

solid nitrogen
GS chemical elements
. nitrogen
. . **solid nitrogen**
gases
. nitrogen
. . **solid nitrogen**
. solidified gases
. . solid cryogens
. . . **solid nitrogen**
solids
. solidified gases
. . solid cryogens
. . . **solid nitrogen**
RT cryogenics
refrigerants

solid oxide fuel cells
(added December 1995)
GS electric generators

. direct power generators
. . fuel cells
. . . **solid oxide fuel cells**
electrochemical cells
. fuel cells
. . **solid oxide fuel cells**
RT oxides
solid electrolytes

solid phases
RT eutectics
gas–metal interactions
gas–solid interfaces
liquid phases
liquid–solid interfaces
liquidus
metallic hydrogen
phase diagrams
phase separation (materials)
∞ phases
solidified gases
solidus
syntectic alloys

solid propellant combustion
DEF The burning of solid propellants by rapid oxidation and production of expanding gases, heat, and light.
GS combustion
. propellant combustion
. . **solid propellant combustion**
. . . solid propellant ignition
RT burning rate
combustion stability
erosive burning
fuel combustion
heat generation
metal combustion
propellant chemistry
propellant consumption

solid propellant ignition
GS combustion
. propellant combustion
. . solid propellant combustion
. . . **solid propellant ignition**
ignition
. **solid propellant ignition**
RT hybrid propellants
hypergolic rocket propellants
igniters
ignition temperature
inhibitors
metal combustion
pyrophoric materials
squibs

solid propellant rocket engines
DEF Rocket engines fueled with solid propellants. Such motors consist essentially of a combustion chamber containing the propellant, and a nozzle for the exhaust jet, although they often contain other components, such as grids or liners.
GS engines
. rocket engines
. . **solid propellant rocket engines**
. . . Algol engine
. . . apogee boost motors
. . . ASROC engine
. . . Hercules engine
. . . M-46 engine
. . . M-55 engine
. . . M-56 engine
. . . M-57 engine
. . . Nike booster rocket engines
. . . P-1 engine
. . . SL-3 rocket engine
. . . Space Shuttle Boosters
. . . . Advanced Solid Rocket Motor (STS)
. . . SYNCOM apogee engines
. . . TX-77 engine
. . . TX-354 engine
. . . X-248 engine
. . . X-254 engine
. . . X-258 engines
. . . . X-258-B1 engine
. . . X-259 engine
. . . XM-33 engine
RT air slew missiles
Antares rocket vehicle
Arcas rocket vehicles
Argo rocket vehicles
Astrobee 1500 rocket vehicle
Astrobee rocket vehicles
Athena rocket vehicle
BE-3 engine
Berenice rocket vehicle
Black Brant 1 sounding rocket
Black Brant 2 sounding rocket
Black Brant 3 sounding rocket
Black Brant 4 sounding rocket
Black Brant 5 sounding rocket
Black Brant sounding rockets
Blue Goose missile
Blue Scout rocket vehicle
BOMARC A missile
BOMARC B missile
bonded joints
booster rocket engines
burning rate
burnout
Cajun rocket vehicle
Diamant launch vehicle
ducted rocket engines
EXOS sounding rocket
Falcon missile
Folding Fin aircraft rocket vehicle
Genie rocket vehicle
Hawk missile
Honest John rocket vehicle
hybrid propellant rocket engines
∞ hybrid rocket engines
integral rocket ramjets
internal combustion engines
Jaguar rocket vehicle
JATO engines
Javelin rocket vehicle
Juno 1 launch vehicle
Juno 2 launch vehicle
Juno launch vehicles
Jupiter C rocket vehicle
Kappa 8 rocket vehicle
Kappa 9 rocket vehicle
Kappa rocket vehicles
Lambda rocket vehicles
liquid propellant rocket engines
Little Joe 2 launch vehicle
Little John rocket vehicle
Loki rocket vehicle
Mace missiles
Matra missile
Mauler missile
Meteor 1 rocket vehicle
Minuteman ICBM
Nike-Ajax missile
Nike-Apache rocket vehicle
Nike-Cajun rocket vehicle
Nike-Hercules missile
Nike-Javelin rocket vehicle
Nike-Tomahawk rocket vehicle
Nike-Zeus missile
Pershing missile
Phoenix sounding rocket
polaris missiles
RAM B launch vehicle
Redeye missile
Regulus missile
restartable rocket engines
retrorocket engines
Rubis rocket vehicle
Scout launch vehicle
sergeant missiles
Shrike missile
Skua rocket vehicles
Skybolt missile
Skylark rocket vehicle
Space Shuttle upper stage D
Sparrow 2 missile
Sparrow missiles
Sprint missile
SS-11 missile
Sunblazer space probe
sustainer rocket engines
Talos missile
tartar missile
terrier missile
Thor Able rocket vehicle
Thor Delta launch vehicle
Thor launch vehicles
Titan launch vehicles
Trailblazer 1 reentry vehicle
Trailblazer 2 reentry vehicle
ullage rocket engines
vanguard 2 launch vehicle
Vernier engines
WASP sounding rocket
X-17 reentry vehicle
Zuni rocket vehicle

solid propellants
DEF Specifically, a rocket propellant in the solid form, usually containing both fuel and oxidizer combined or mixed, and formed into a monolithic (not powdered or granulated) grain.
GS propellants
. **solid propellants**
. . case bonded propellants
. . composite propellants
. . nitramine propellants
. . plastic propellants
. . solid rocket propellants
. . . double base rocket propellants
. . . HMX
. . . HTPB propellants
. . . metal propellants
RT aircraft fuels
chemical fuels
colloidal propellants
gelled propellants
high temperature propellants
hybrid propellants
inhibitors
metal fuels
nitroguanidine
plasticizers
propellant binders
propellant grains
RDX
rocket propellants
storable propellants

solid rocket binders
GS additives
. propellant additives
. . propellant binders
. . . **solid rocket binders**
binders (materials)

propellant binders
solid rocket binders
RT glycidyl azide polymer
plasticizers

Solid Rocket Boosters (Space Shuttle)
USE **Space Shuttle Boosters**

solid rocket propellants
GS propellants
rocket propellants
solid rocket propellants
double base rocket propellants
HMX
HTPB propellants
metal propellants
solid propellants
solid rocket propellants
double base rocket propellants
HMX
HTPB propellants
metal propellants
RT ammonium perchlorates
burning rate
case bonded propellants
composite propellants
Domino propellants
gelled rocket propellants
hybrid propellants
liquid rocket propellants
monopropellants
potassium perchlorates
propellant grains
RDX
rocket engines
slurry propellants

solid rotation
USE **rotating bodies**

solid solutions
GS mixtures
solutions
solid solutions
solids
solid solutions
RT aging (metallurgy)
alloying
alloys
cluster variation method
liquid phases
liquidus
melting points
order–disorder transformations
Ostwald ripening
phase diagrams
precipitation hardening
supersaturation
ternary systems

solid state
RT crystallization
energy gaps (solid state)
melting points
metallic hydrogen
solids

solid state devices
DEF Devices which utilize the electric, magnetic, and photic properties of the solid materials, e.g., binary magnetic cores or transistors.
GS electronic equipment
solid state devices
cryotrons
crystal rectifiers
metal–nitride–oxide–semiconductors
multispectral linear arrays
semiconductor devices
avalanche diodes
cryosar
Barritt diodes
charge transfer devices
bucket brigade devices
charge coupled devices
charge injection devices
germanium diodes
heterojunction devices
high electron mobility transistors
MODFETS
junction diodes
MIM diodes
step recovery diodes
light emitting diodes
metal oxide semiconductors
CMOS
ITO (semiconductors)
SOS (semiconductors)
MIM (semiconductors)
MIS (semiconductors)
MOM (semiconductors)
MSM (semiconductors)
NDM semiconductor devices
neuristors
parametric diodes
photodiodes
photovoltaic cells
solar cells
vertical junction solar cells
Schottky diodes
semiconductor lasers
aluminum gallium arsenide lasers
gallium arsenide lasers
quantum well lasers
YLF lasers
SOI (semiconductors)
thermistors
thyristors
silicon controlled rectifiers
transferred electron devices
transistor amplifiers
transistors
bipolar transistors
field effect transistors
charge flow devices
JFET
MODFETS
high electron mobility transistors
MODFETS
junction transistors
JFET
phototransistors
silicon transistors
SOS (semiconductors)
TRAPATT devices
varactor diodes
varistors
SIS (semiconductors)
SIS (superconductors)
solid state lasers
aluminum gallium arsenide lasers
DBR lasers
fiber lasers
gallium arsenide lasers
quantum well lasers
ruby lasers
YAG lasers
YLF lasers
RT amplifiers
bubble technique
capacitors
circuits
∞ devices
electric bridges
laser cavities
lasers
MBM junctions
miniature electronic equipment
oscillators
photomasks
rectifiers
resistors
signal generators
superconductors (materials)
thin films
threshold voltage
transformers
wafers

solid state lasers
GS electronic equipment
solid state devices
solid state lasers
aluminum gallium arsenide lasers
DBR lasers
fiber lasers
gallium arsenide lasers
quantum well lasers
ruby lasers
YAG lasers
YLF lasers
stimulated emission devices
lasers
solid state lasers
aluminum gallium arsenide lasers
DBR lasers
fiber lasers
gallium arsenide lasers
quantum well lasers
ruby lasers
YAG lasers
YLF lasers
RT continuous wave lasers
distributed feedback lasers
infrared lasers
laser cavities
Q switched lasers
semiconductor lasers
surface emitting lasers

∞ **solid state physics**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT condensed matter physics
crystallography
electrical properties
electron mobility
energy gaps (solid state)
forbidden transitions
hole mobility
magnetic properties
optical properties
∞ physics
∞ science
semiconductors (materials)
superconductivity
theoretical physics
thin films
transport properties

solid surfaces
GS **solid surfaces**
crystal surfaces
RT liquid surfaces
metal surfaces
surface cracks
surface finishing
surface properties
∞ surfaces

solid suspensions
GS mixtures

. **solid suspensions**
RT colloidal propellants
composite materials
metallography
particulates
phase diagrams
∞ suspensions

solid wastes
GS wastes
. **solid wastes**
RT composting
garbage
human wastes
industrial wastes
landfills
liquid wastes
metabolic wastes
pollution
radioactive wastes
residues
sewage
sludge
waste disposal
waste energy utilization
waste utilization

solid–solid interfaces
GS interfaces
. **solid–solid interfaces**
RT gas–solid interfaces
liquid–solid interfaces
surface properties

solidification
UF *rapid solidification*
GS **solidification**
. directional solidification (crystals)
. melt spinning
RT casting
castings
coagulation
crystallization
freezing
gelation
ingots
melting points
mushy zones
occlusion
Ostwald ripening
phase transformations
rheocasting
∞ **setting**
solidified gases
transition temperature
vitrification

solidified gases
UF *solid argon*
GS **gases**
. **solidified gases**
. . solid cryogens
. . . solid nitrogen
solids
. **solidified gases**
. . solid cryogens
. . . solid nitrogen
RT cryogenic fluids
cryogenic temperature
cryogenics
freezing
low temperature physics
melting points
metallic hydrogen
solid phases
solidification

solids
GS **solids**
. organic solids
. solid solutions
. solidified gases
. . solid cryogens
. . . solid nitrogen
RT ∞ bodies
∞ fluids
∞ materials
metallic hydrogen
phase transformations
semisolids
solid mechanics
solid state
thermochromatic materials
vapor phases

solids flow
GS fluid flow
. **solids flow**
RT ∞ flow
flow measurement
flow theory
mass flow
multiphase flow
particle size distribution
steady flow
two phase flow
uniform flow
unsteady flow

solidus
RT binary systems (materials)
liquid phases
liquidus
solid phases

solions
RT circuits
diodes
integrators
ion currents

solitary waves
DEF Nonlinear waves capable of propagation without spreading out, breaking up, or dissipating their strength over distance. Used for Solitrons.
UF *solitons*
GS traveling waves
. **solitary waves**
RT backward waves
cnoidal waves
elastic waves
electromagnetic radiation
plane waves
pulses
radio waves
rates (per time)
velocity

solithanes
RT elastomers
∞ polymers
synthetic rubbers

solitons
USE **solitary waves**

Solomon computers
GS data processing equipment
. computers
. . digital computers
. . . **Solomon computers**

Solrad 10 satellite
USE **Explorer 44 satellite**

solstices
DEF The two points of the ecliptic farthest from the celestial equator; two points on the celestial sphere occupied by the sun at maximum declination.
RT equinoxes
seasons
solar position
summer
winter

solubility
UF *immiscibility*
miscibility
RT clarity
concentration (composition)
diffusivity
dissolved gases
dissolving
gas–solid interfaces
Henry law
hygroscopicity
incompatibility
liquid phases
liquid–gas mixtures
liquid–liquid interfaces
liquid–vapor interfaces
miscibility gap
mixtures
phase diagrams
phase separation (materials)
precipitation (chemistry)
solutions
supercritical fluids
thermodynamic properties
thixotropy
turbidity
viscosity

solutes
RT dissolved organic matter
dissolving
solutions

∞ **solution**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT dissolving
problem solving
solutions

solutions
GS mixtures
. **solutions**
. . aqueous solutions
. . gas mixtures
. . . air
. . . . alveolar air
. . . . compressed air
. . . . expired air
. . . . high temperature air
. . . . liquid air
. . . detonable gas mixtures
. . photographic emulsions
. . . nuclear emulsions
. . solid solutions
RT azeotropes
composition (property)
dissolved gases
emulsions
eutectics
Henry law
Raoult law
solubility
solutes
∞ solution
solvents

titration

solvation
DEF The process of swelling, getting, or dissolving of a material by a solvent; for resins, the solvent can be plasticized.
RT aqueous solutions
chemical reactions
reaction kinetics
solvents

solvent extraction
GS extraction
. **solvent extraction**
RT ion extraction
purification
∞ separation

solvent refined coal
DEF Low-sulfur distillate fuels from coal, plus the byproducts of methane, light hydrocarbons, and naphtha, all useful for making pipeline gas, ethylene, and high-octane unleaded gasoline.
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . fossil fuels
. . . . coal
. . . . . **solvent refined coal**
resources
. Earth resources
. . fossil fuels
. . . coal
. . . . **solvent refined coal**
rocks
. sedimentary rocks
. . carbonaceous rocks
. . . coal
. . . . **solvent refined coal**
RT benzene
bitumens
carbonaceous materials
coal liquefaction
coal utilization
fractionation
fuel oils
gasoline
hydrocarbon fuel production
methane
product development

solvent retention
DEF The occurrence of solvent residues in chemical or material end products or intermediates.
RT dissolving
solvents

solvents
DEF The liquid part of an aerosol formulation used to dissolve solid or other liquid parts. Used for thinners.
UF *thinners*
GS **solvents**
. tetrahydrofuran
. turpentine
RT additives
coatings
diluents
dissolving
extraction
furans
paint removal
solutions
solvation
solvent retention
solvolysis
toluene
triacetin
trichloroethylene

solvolysis
GS reclamation
. materials recovery
. . **solvolysis**
RT recycling
solvents

Somalia
GS nations
. **Somalia**
RT Africa

Sommerfeld approximation
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Sommerfeld approximation**
RT antenna radiation patterns
directional antennas
electromagnetic fields
radio transmission

Sommerfeld waves
GS electromagnetic radiation
. **Sommerfeld waves**
surface waves
. **Sommerfeld waves**
RT dielectric properties
electric conductors

sonar
DEF A method or system, analogous to radar used under water, in which high frequency sound waves are emitted so as to be reflected back from objects, and used to detect the objects of interest. Called asdic by the British. (From SOund, NAvigation, and Ranging.)
GS **sonar**
. sonobuoys
RT distance measuring equipment
echo sounding
echo suppressors
hydrophones
LOFAR
navigation aids
sound localization
sound ranging
ultrasonic wave transducers
underwater acoustics
underwater communication

sondes
UF *meteorological probes*
GS measuring instruments
. **sondes**
. . dropsondes
. . Judi-Dart rocket
. . radiosondes
. . . ionosondes
. . . rawinsondes
RT Apache rocket vehicle
Cajun rocket vehicle
∞ probes
sounding
sounding rockets

sonic anemometers
GS measuring instruments
. anemometers
. . **sonic anemometers**
RT acoustics
flowmeters
hot-film anemometers
velocity measurement

sonic booms
DEF Noises created by shock waves that emanate from aircraft or other objects traveling at or above sonic velocity.
GS elastic waves
. shock waves
. . **sonic booms**
. sound waves
. . noise (sound)
. . . aircraft noise
. . . . **sonic booms**
RT acoustic velocity
aerodynamic noise
∞ boom
caustic lines
jet aircraft noise
supersonic flight
transonic flight

sonic fatigue
USE **acoustic fatigue**

sonic flow
USE **transonic flow**

sonic nozzles
RT acoustic nozzles
conical nozzles
∞ nozzles
supersonic nozzles
transonic flow
transonic nozzles

sonic soldering
USE **ultrasonic soldering**

sonic speed
USE **acoustic velocity**

sonic waveguides
USE **acoustic delay lines**

sonobuoys
GS radio equipment
. radio transmitters
. . **sonobuoys**
sonar
. **sonobuoys**
transmitters
. radio transmitters
. . **sonobuoys**
RT antisubmarine warfare
hydrophones
underwater acoustics
underwater communication

sonograms
RT recording instruments
sound waves
whistler recorders
whistlers

sonoholography
USE **acoustical holography**

sonoluminescence
GS emission
. light emission
. . luminescence
. . . **sonoluminescence**

soot
GS particles
. particulates
. . **soot**
RT air pollution
carbon
combustion products
fire damage
smoke

smoke abatement

sorbates
DEF Gas taken up by sorbents.
RT sorbents
sorption

sorbents
DEF The materials which take up gas by sorption.
GS **sorbents**
. absorbents
. adsorbents
RT sorbates
sorption

Soret coefficient
GS coefficients
. diffusion coefficient
. . **Soret coefficient**
transport properties
. diffusion coefficient
. . **Soret coefficient**
RT liquid flow
thermal diffusion

sorghum
DEF Any of a number of related cereal grasses with sweet juicy stalks cultivated as farm crops for grain, fodder, syrup, etc.
GS farm crops
. **grains (food)**
. . **sorghum**
plants (botany)
. grasses
. . **sorghum**
RT agriculture
crop identification
∞ crops
Earth resources

sorption
DEF The taking up of gas by absorption, adsorption, chemisorption, or any combination of these processes. Used for cryosorption.
UF *cryosorption*
GS **sorption**
. adsorption
. . chemisorption
RT ∞ absorption
chromatography
concentrating
extraction
gas chromatography
liquid chromatography
material absorption
permeating
∞ separation
sorbates
sorbents
surface properties

sortie can
USE **sortie systems**

sortie lab
USE **sortie systems**

sortie systems
UF *sortie can*
sortie lab
GS payloads
. **sortie systems**
RT space laboratories
Space Shuttle payloads
space shuttles
space stations
Spacelab payloads

sorting
USE **classifying**

sorting algorithms
(added November 1994)
DEF An algorithm that finds the most significant element in a set which is then compared to each element in succession to achieve an efficient sorting process.
GS mathematical logic
. algorithms
. . **sorting algorithms**
RT ∞ classifying
computer techniques
heuristic methods
hypercube multiprocessors
iterative solution
parallel processing (computers)
Poisson density functions
selection
sequential analysis

SOS (semiconductors)
UF *silicon-on-sapphire junctions*
silicon-on-sapphire semiconductors
silicon-on-sapphire transistors
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . metal oxide semiconductors
. . . . **SOS (semiconductors)**
. . . transistors
. . . . silicon transistors
. . . . . **SOS (semiconductors)**
semiconductors (materials)
. metal oxide semiconductors
. . **SOS (semiconductors)**
RT ITO (semiconductors)
SIS (semiconductors)
SOI (semiconductors)

SOT
USE **solar optical telescope**

sound
USE **acoustics**

sound absorption
USE **sound transmission**

sound amplification
GS amplification
. **sound amplification**
RT acoustic attenuation
acoustic excitation
acoustics

sound barrier
USE **acoustic velocity**

sound detecting and ranging
(added February 1993)
UF *acoustic detection*
RT acoustic scattering
atmospheric temperature
∞ instruments
measuring instruments
meteorological instruments
meteorology
sodar
temperature measurement

sound detectors
USE **sound transducers**

sound fields
DEF Regions containing sound waves.
RT acoustics
field theory (physics)
microsonics
propeller noise

sound fixing and ranging
DEF A method for acoustically tracking submerged bodies or floats utilizing fixed hydrophones. Used for SFAR and SOFAR.
UF *SFAR*
SOFAR
RT sound ranging
sound transmission
underwater acoustics

sound frequencies
USE **acoustic frequencies**

sound generators
DEF Transducers which convert electrical, mechanical or other forms of energy into sound. Used for acoustic generators.
UF *acoustic generators*
RT acoustic nozzles
audio frequencies
auditory stimuli
bells
continuous noise
∞ generators
horns
loudspeakers
noise generators
radiation sources
signal generators
∞ signals
sirens
warning systems

sound holography
USE **acoustical holography**

sound intensity
DEF In a specified direction at a point, the average rate of sound energy transmitted in the specified direction through a unit area normal to this direction at the point considered.
GS acoustic properties
. **sound intensity**
. . zero sound
rates (per time)
. flux density
. . **sound intensity**
. . . zero sound
RT auditory stimuli
bioacoustics
effective perceived noise levels
loudness
noise intensity
noise measurement
radiant flux density
signal fading
signal fading rate
sirens

sound localization
GS perception
. **sound localization**
RT auditory perception
bearing (direction)
binaural hearing
detection
echo sounding
∞ orientation
position indicators
range finders
sonar
space perception
tracking (position)

sound measurement
USE **acoustic measurement**

sound perception
USE **auditory perception**

sound pressure
DEF At a point, the total instantaneous pressure at that point in the presence of a sound wave minus the static pressure at that point.
GS pressure
. radiation pressure
. . **sound pressure**
RT acoustic measurement
acoustic velocity
explosions
flux density
loudness
noise (sound)
shock waves
static pressure

sound propagation
GS transmission
. wave propagation
. . acoustic propagation
. . . **sound propagation**
RT acoustics
attenuation
∞ conduction
diffusion
noise generators
noise propagation
shock wave propagation

sound ranging
GS rangefinding
. **sound ranging**
RT detection
distance measuring equipment
echo sounding
position (location)
sonar
sound fixing and ranging
target acquisition
tracking (position)

sound transducers
UF *sound detectors*
GS transducers
. **sound transducers**
. . electroacoustic transducers
. . . hydrophones
. . . loudspeakers
. . . microphones
RT electroacoustics
∞ radiators
signal detection
signal detectors
underwater acoustics
underwater communication

sound transmission
UF *sound absorption*
GS transmission
. **sound transmission**
RT ∞ absorption
acoustics
attenuation
audio frequencies
∞ conduction
earphones
elastic waves
energy absorption
monaural signals
multipath transmission
∞ paths
propeller noise
signal transmission
sirens
sound fixing and ranging
telephony
thermoclines
wave propagation

sound velocity
USE **acoustic velocity**

sound waves
SN (ELASTIC WAVES IN THE AUDIBLE RANGE)
DEF Mechanical disturbances advancing with infinite velocity through an elastic medium, and consisting of longitudinal displacements of the medium, i.e., consisting of compressional and rarefactional displacements parallel to the direction of advance of the disturbance; a longitudinal wave. Sound waves are small amplitude adiabatic oscillations. Used for acoustic radiation and acoustic vibrations.
UF *acoustic radiation*
acoustic vibrations
GS elastic waves
. **sound waves**
. . electroacoustic waves
. . ion acoustic waves
. . Lamb waves
. . noise (sound)
. . . aerodynamic noise
. . . . blade slap noise
. . . . propeller noise
. . . aircraft noise
. . . . blade slap noise
. . . . jet aircraft noise
. . . . propeller noise
. . . sonic booms
. . . engine noise
. . . . rocket engine noise
. . . thermal noise
RT acoustic coupling
acoustic frequencies
acoustic measurement
acoustic properties
acoustic streaming
acoustical holography
acoustics
aeolian tones
audio frequencies
auditory perception
∞ blasts
deep scattering layers
detonation waves
diffusion
longitudinal waves
loudness
Mach cones
magnetoelastic waves
microsonics
noise pollution
noise prediction (aircraft)
phonons
plane waves
polarized elastic waves
∞ radiation
reverberation
shock waves
sonograms
surface acoustic wave devices
ultrasonic radiation
∞ waves

sound–sound interactions
RT harmonics
∞ interactions
intermodulation
wave dispersion

sounders
USE **sounding**

sounding
DEF Any penetration of the natural environment for scientific observation usually by sounding rockets or balloons. Used for sounders.
UF sounders
GS **sounding**
. acoustic sounding
. atmospheric sounding
. balloon sounding
. echo sounding
. ionospheric sounding
. microwave sounding
. rocket sounding
. satellite sounding
RT bathymeters
depth measurement
∞ measurement
meteorological balloons
meteorological flight
ROBIN balloons
sondes

sounding rockets
DEF Rockets designed primarily for routine upper air observation (as opposed to research) in the lower 250,000 feet of the atmosphere, especially that portion inaccessible to balloons, i.e., above 100,000. Used for meteorological rockets and rocket sondes.
UF *meteorological rockets*
rocket sondes
GS rocket vehicles
. **sounding rockets**
. . Aerobee rocket vehicle
. . Antares rocket vehicle
. . Apache rocket vehicle
. . Arcas rocket vehicles
. . Aries sounding rocket
. . Astrobee rocket vehicles
. . . Astrobee 1500 rocket vehicle
. . Black Brant sounding rockets
. . . Black Brant 1 sounding rocket
. . . Black Brant 2 sounding rocket
. . . Black Brant 3 sounding rocket
. . . Black Brant 4 sounding rocket
. . . Black Brant 5 sounding rocket
. . Cajun rocket vehicle
. . Dornier paraglider rocket vehicle
. . EXOS sounding rocket
. . Jaguar rocket vehicle
. . Judi-Dart rocket
. . Kappa rocket vehicles
. . . Kappa 8 rocket vehicle
. . . Kappa 9 rocket vehicle
. . Lambda rocket vehicles
. . Loki rocket vehicle
. . Petrel sounding rocket
. . Phoenix sounding rocket
. . Skua rocket vehicles
. . Skylark rocket vehicle
. . Venus fly trap rocket vehicle
. . Veronique rocket vehicles
. . Vertikal rockets
. . WASP sounding rocket
RT acoustic sounding
Argo rocket vehicles
ionosondes
Javelin rocket vehicle
meteorological instruments
meteorological satellites
Nike-Javelin rocket vehicle
payload control

radiosondes
rocket sounding
sondes
Viking rocket vehicle

sounds (topographic features)
GS **sounds (topographic features)**
. Block Island Sound (RI)
. McMurdo sound
. Prince William Sound (AK)
RT Chesapeake Bay (US)
inlets (topography)
oceans
rivers
water

source programs
GS computer programs
. **source programs**

∞ **sources**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED. –CONSULT THE TERMS LISTED BELOW)
RT causes
derivation
electron sources
extragalactic radio sources
ion sources
nonpoint sources
radiation sources
radio sources (astronomy)
sinks

South Africa
USE **Republic of South Africa**

South America
GS continents
. **South America**
RT Andes Mountains (South America)
Argentina
Bolivia
Brazil
Central America
Chile
Colombia
Ecuador
French Guiana
Guyana
Magdalena–Cauca Valley (Colombia)
Paraguay
Peru
Surinam
Trinidad and Tobago
Uruguay
Venezuela

South Carolina
GS nations
. United States
. . **South Carolina**
RT Sand Hills Region (GA–NC–SC)

South Dakota
GS nations
. United States
. . **South Dakota**
RT Black Hills (SD–WY)
Missouri River (US)

South Korea
UF *Republic of Korea*
GS nations
. **South Korea**
RT **Asia**
∞ Korea
North Korea

South Vietnam
USE **Vietnam**

South West Africa
USE **Namibia**

Southeast Asia
GS regions
. **Southeast Asia**
RT Asia
Vietnam

Southern California
GS regions
. **Southern California**
RT California
Mexico
Nevada
Pacific Ocean
United States

Southern Hemisphere
GS **Southern Hemisphere**
. Antarctic regions
. . McMurdo sound
. . Ross ice shelf
RT ∞ hemispheres
Northern Hemisphere
Southern oscillation
Southern sky

Southern oscillation
GS oscillations
. **Southern oscillation**
RT anomalies
atmospheric circulation
atmospheric pressure
climate
el Nino
periodic variations
pressure oscillations
Southern Hemisphere

Southern sky
DEF That portion of the celestial sphere between the celestial equator and the celestial south pole (and generally visible from areas in the Earth's southern hemisphere).
RT astronomical catalogs
astronomical observatories
astronomical photography
astronomical spectroscopy
astronomy
northern sky
sky surveys (astronomy)
Southern Hemisphere

Southern Yemen
UF Aden
GS nations
. **Southern Yemen**
regions
. **Southern Yemen**
RT Asia

sovereignty
RT international cooperation
international law
politics
voting

Soviet satellites
GS artificial satellites
. **Soviet satellites**
. . Cosmos 782 satellite
. . Cosmos 936 satellite
. . Cosmos satellites
. . . Cosmos 2 satellite
. . . Cosmos 3 satellite
. . . Cosmos 5 satellite
. . . Cosmos 6 satellite
. . . Cosmos 14 satellite
. . . Cosmos 44 satellite
. . . Cosmos 54 satellite
. . . Cosmos 71 satellite
. . . Cosmos 110 satellite
. . . Cosmos 137 satellite
. . . Cosmos 144 satellite
. . . Cosmos 149 satellite
. . . Cosmos 166 satellite
. . . Cosmos 186 satellite
. . . Cosmos 188 satellite
. . . Cosmos 206 satellite
. . . Cosmos 213 satellite
. . . Cosmos 224 satellite
. . . Cosmos 225 satellite
. . . Cosmos 381 satellite
. . . Cosmos 954 satellite
. . . Cosmos 1129 satellite
. . Intercosmos satellites
. . Granat satellite
. . Molniya satellites
. . Prognoz satellites
. . Proton satellites
. . . Proton 1 satellite
. . . Proton 2 satellite
. . . Proton 3 satellite
. . . Proton 4 satellite
. . Raduga satellite
. . Sputnik satellites
. . . Sputnik 1 satellite
. . . Sputnik 2 satellite
. . . Sputnik 3 satellite
. . . Sputnik 4 satellite
. . . Sputnik 5 satellite
. . Venera satellites
. . . Venera 2 satellite
. . . Venera 3 satellite
. . . Venera 4 satellite
. . . Venera 5 satellite
. . . Venera 6 satellite
. . . Venera 7 satellite
. . . Venera 8 satellite
. . . Venera 9 satellite
. . . Venera 10 satellite
. . . Venera 11 satellite
. . . Venera 12 satellite
RT Russian Space Program

Soviet spacecraft
GS **Soviet spacecraft**
. Buran space shuttle
. Lunik lunar probes
. . Lunik 2 lunar probe
. . Lunik 3 lunar probe
. . Lunik 9 lunar probe
. . Lunik 10 lunar probe
. . Lunik 11 lunar probe
. . Lunik 12 lunar probe
. . Lunik 13 lunar probe
. . Lunik 14 lunar probe
. . Lunik 16 lunar probe
. . Lunik 17 lunar probe
. . Lunik 19 lunar probe
. . Lunik 20 lunar probe
. . Lunik 22 lunar probe
. Mars 1 spacecraft
. Mars 2 spacecraft
. Mars 3 spacecraft
. Mars 4 Spacecraft
. Mars 5 spacecraft
. Mars 6 spacecraft
. Mars 7 spacecraft
. Mir space station
. . Kvant modules

. . Priroda module
. Salyut space station
. Soyuz spacecraft
. Sputnik satellites
. . Sputnik 1 satellite
. . Sputnik 2 satellite
. . Sputnik 3 satellite
. . Sputnik 4 satellite
. . Sputnik 5 satellite
. Venera satellites
. . Venera 2 satellite
. . Venera 3 satellite
. . Venera 4 satellite
. . Venera 5 satellite
. . Venera 6 satellite
. . Venera 7 satellite
. . Venera 8 satellite
. . Venera 9 satellite
. . Venera 10 satellite
. . Venera 11 satellite
. . Venera 12 satellite
. Zond space probes
. . Zond 1 space probe
. . Zond 2 space probe
. . Zond 3 space probe
. . Zond 4 space probe
. . Zond 5 space probe
. . Zond 6 space probe
. . Zond 7 space probe
. . Zond 8 space probe
RT Russian Space Program
∞ spacecraft

Soviet Union
USE **U.S.S.R.**

soybeans
GS farm crops
. leguminous plants
. . **soybeans**
plants (botany)
. leguminous plants
. . **soybeans**
RT ∞ food

Soyuz spacecraft
GS manned spacecraft
. **Soyuz spacecraft**
Soviet spacecraft
. **Soyuz spacecraft**
RT Apollo Soyuz test project
Assured Crew Return Vehicle
Kvant modules
Salyut space station
U.S.S.R. space program

∞ **space**
DN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT algebra
analysis (mathematics)
Cartan space
cislunar space
deep space
fractals
function space
hyperspaces
set theory
spatial dependencies

space adaptation syndrome
RT aerospace medicine
bioastronautics
biological effects
long duration space flight
manned space flight
motion sickness
physiological effects
psychological effects
space flight stress
space psychology
weightlessness

Space Arrow satellite
USE **Cosmos 149 satellite**

space based radar
DEF Radar systems installed on large space structures.
GS radar
. **space based radar**
. . Shuttle Imaging Radar
RT airborne radar
antenna arrays
radiation effects
radiation shielding

space bases
GS **space bases**
. lunar bases
. space colonies
. . Mars bases
RT ∞ bases
Mir space station
Salyut space station
space stations
stations

space biology
USE **exobiology**

space buses
USE **ferry spacecraft**

space capsules
DEF Containers used for carrying out experiments in space. Used for capsules (spacecraft).
UF *capsules (spacecraft)*
GS **space capsules**
. Discoverer recovery capsules
. escape capsules
. Mercury spacecraft
. . Aurora 7
. . Faith 7
. . Friendship 7
. . SIGMA 7
RT artificial satellites
biosatellites
cabin atmospheres
∞ capsules
cockpits
Gemini spacecraft
interplanetary spacecraft
landing modules
lunar spacecraft
manned spacecraft
Mercury flights
recoverable spacecraft
reentry vehicles
rendezvous spacecraft
soft landing spacecraft
∞ spacecraft
spacecraft cabins
spacecraft modules
unmanned spacecraft
voskhod manned spacecraft
Vostok spacecraft

space charge
DEF The electric charge carries by a cloud or stream of electrons or ions in a vacuum or a region of low gas pressure when the charge is sufficient to produce local changes in the potential distribution. The net electric charge within a given volume.
GS electric charge
. **space charge**
RT bunching
Child–Langmuir law
electric discharges
electron clouds
Landau damping
magnetohydrodynamics
nonohmic effect
orbitrons
perveance
plasmas (physics)
static electricity

space colonies
GS space bases
. **space colonies**
. . Mars bases
RT lunar bases
lunar shelters
Mars exploration
space habitats
space stations
terraforming

space commercialization
DEF For profit activities in space or prefatory to space activity.
GS commercialization
. **space commercialization**
RT aerospace industry
Ariane 4 launch vehicle
Ariane 5 launch vehicle
commerce lab
commercial spacecraft
communication satellites
direct broadcast satellites
Energiya launch vehicle
insurance (contracts)
low earth orbits
lunar mining
∞ microgravity applications
Proton launch vehicle
space industrialization
space manufacturing
space processing
spacecraft launching
technology transfer

space communication
GS telecommunication
. **space communication**
. . extraterrestrial communication
. . interplanetary communication
. . lunar communication
. . . circumlunar communication
. . spacecraft communication
. . . reentry communication
. . . satellite communication
RT communication satellites
Defense Communications Satellite System
extraterrestrial intelligence
furlable antennas
interstellar communication
lasers
line of sight communication
manned space flight
optical communication
pulse communication
radio communication
radio telemetry
television systems
wireless communication

space cooling (buildings)
DEF The cooling of buildings with a solar energy system which incorporates water chillers controlled by thermostats and other devices to provide a comfortable living environment.
GS cooling
. **space cooling (buildings)**
RT cooling systems
energy technology
heat exchangers
heat pumps
liquid cooling
residential energy
solar collectors
solar cooling
solar energy conversion
temperature control

space debris
GS debris
. **space debris**
RT asteroid belts
asteroids
Chiron
cosmic dust
dust
meteoroids
micrometeoroids
∞ spacecraft
spacecraft breakup
spacecraft design
Toro asteroid
Vesta asteroid

space density
GS density (mass/volume)
. **space density**
density (number/volume)
. **space density**
RT atmospheric density
electron density (concentration)
ion density (concentration)
particle density (concentration)
plasma density
plasma interaction experiment
proton density (concentration)

space detection and tracking system
UF *SPADATS (tracking system)*
GS networks
. tracking networks
. . **space detection and tracking system**
tracking (position)
. **space detection and tracking system**
RT minitrack system
missile tracking
optical tracking
photographic tracking
polystation doppler tracking system
spacecraft tracking
STDN (network)
∞ systems
tracking stations

space diversity
USE **reception diversity**

space electric rocket tests
UF *SERT (rocket tests)*
GS engine tests
. **space electric rocket tests**
RT electric rocket engines
flight tests
ground tests
SERT 1 spacecraft
SERT 2 spacecraft
∞ tests

space environment
USE **aerospace environments**

space environment simulation
GS simulation
. environment simulation
. . **space environment simulation**
. . . **weightlessness simulation**
. . . . neutral buoyancy simulation
RT altitude simulation
atmospheric entry simulation
flight simulation
flight simulators
High Vacuum Orbital Simulator
Langley complex coordinator
motion simulators
solar simulation
thermal simulation
vacuum chambers
virtual reality

space environmental lubrication
USE **spacecraft lubrication**

space erectable structures
GS **space erectable structures**
. inflatable spacecraft
. . Beacon satellites
. . . Beacon Explorer A
. . . Explorer 22 satellite
RT expandable structures
folding structures
inflatable space structures
inflatable structures
Large Deployable Reflector
large space structures
maypole antennas
orbital assembly
rigid structures
self erecting devices
space station structures
space technology experiments
spacecraft modules
spacecraft structures
∞ structures

Space Exper with Particle Accelerators
USE **SEPAC (payload)**

space exploration
UF *planetary exploration*
GS exploration
. **space exploration**
. . lunar exploration
. . Mars exploration
RT aerospace environments
asteroid missions
astrodynamics
∞ astronautics
bioastronautics
Cassini mission
extraterrestrial environments
extraterrestrial resources
French space program
International Space Year
interplanetary flight
interplanetary spacecraft
interstellar spacecraft
Jupiter rings
Magellan project (NASA)
manned Mars missions
manned space flight
Mars 69 project
Mars 71 project
Mars sample return missions
planetary bases
planetary composition
planetary geology
Solar Maximum Mission-A
TOPS (spacecraft)
Viking 1 spacecraft
Viking 2 spacecraft
Viking lander 1
Viking lander 2
Viking lander spacecraft
Viking Mars program
Viking orbiter 1
Viking orbiter 2
Viking orbiter spacecraft

space flight
GS **space flight**
. interplanetary flight
. interstellar travel
. long duration space flight
. lunar flight
. manned space flight
. . Apollo flights
. . . Apollo 5 flight
. . . Apollo 6 flight
. . . Apollo 7 flight
. . . Apollo 8 flight
. . . Apollo 9 flight
. . . Apollo 10 flight
. . . Apollo 11 flight
. . . Apollo 12 flight
. . . Apollo 13 flight
. . . Apollo 14 flight
. . . Apollo 15 flight
. . . Apollo 16 flight
. . . Apollo 17 flight
. . Gemini flights
. . . Gemini 3 flight
. . . Gemini 4 flight
. . . Gemini 5 flight
. . . Gemini 6 flight
. . . Gemini 7 flight
. . . Gemini 8 flight
. . . Gemini 9 flight
. . . Gemini 10 flight
. . . Gemini 11 flight
. . . Gemini 12 flight
. manned reentry
. Mercury flights
. . Mercury MA-1 flight
. . Mercury MA-2 flight
. . Mercury MA-3 flight
. . Mercury MA-4 flight
. . Mercury MA-5 flight
. . Mercury MA-6 flight
. . Mercury MA-7 flight
. . Mercury MA-8 flight
. . Mercury MA-9 flight
. . Mercury MR-1 flight
. . Mercury MR-2 flight
. . Mercury MR-3 flight
. . Mercury MR-4 flight
. Space Shuttle missions
. . Space Shuttle mission 31-A
. . Space Shuttle mission 31-B
. . Space Shuttle mission 31-C
. . Space Shuttle mission 31-D
. . Space Shuttle mission 41-A
. . Space Shuttle mission 41-B
. . Space Shuttle mission 41-C
. . Space Shuttle mission 41-D
. . Space Shuttle mission 41-G
. . Space Shuttle mission 51-A
. . Space Shuttle mission 51-B
. . Space Shuttle mission 51-C
. . Space Shuttle mission 51-D

. . . Space Shuttle mission 51-E
. . . Space Shuttle mission 51-F
. . . Space Shuttle mission 51-G
. . . Space Shuttle mission 51-H
. . . Space Shuttle mission 51-I
. . . Space Shuttle mission 51-J
. . . Space Shuttle mission 51-L
. . . Space Shuttle mission 61-A
. . . Space Shuttle mission 61-B
. . . Space Shuttle mission 61-C
. . . Space Shuttle mission 61-E
. return to Earth space flight
RT aerospace environments
Apollo Soyuz test project
ascent propulsion systems
. astrodynamics
∞ astronautics
atmospheric entry
auxiliary propulsion
bioastronautics
celestial bodies
expeditions
exploration
extravehicular activity
∞ flight
flight mechanics
flight optimization
flight simulation
flyby missions
Grand Tours
Mariner Jupiter-Saturn flyby
Mariner Jupiter-Uranus flyby
meteorological flight
∞ missions
orbits
Physics and Chemistry Experiment in Space
pointing control systems
propulsion
reentry
rocket flight
∞ rockets
solar sails
Space Transportation System flights
spacecraft guidance
spacecraft maneuvers
spacecraft propulsion
suborbital flight
trajectories
Viking 1 spacecraft
Viking 2 spacecraft
Viking lander 1
Viking lander 2
Viking lander spacecraft
Viking orbiter 1
Viking orbiter 2
Viking orbiter spacecraft

space flight feeding
RT consumables (spacecrew supplies)
dehydrated food
diets
eating
∞ food
food intake
food production (in space)
life support systems
nutrition
nutritional requirements
waste disposal

space flight stress
GS stress (biology)
. flight stress (biology)
. . **space flight stress**
RT boredom
∞ flight stress
gravitational physiology
lower body negative pressure
manned space flight
space adaptation syndrome
space psychology
stress (physiology)
stress (psychology)
weightlessness

Space Flight Tracking and Data Network
GS networks
. tracking networks
. . **Space Flight Tracking and Data Network**
RT ∞ data
data acquisition
Global Tracking Network
ground stations
satellite tracking
stations
STDN (network)
tracking stations

space flight training
GS education
. flight training
. . **space flight training**
. . . astronaut training
RT pilot training
spacecraft cabin simulators
training simulators

space gliders
USE **lifting reentry vehicles**

space glossaries
RT bibliographies
dictionaries
documentation
indexes (documentation)
information retrieval
thesauri

space habitats
RT aerospace environments
closed ecological systems
life support systems
Mars bases
space colonies
space stations
spacecrews
terraforming

space heating (buildings)
DEF Heating of living areas for the comfort of occupants (human and/ or animal) by any means (electricity, fuels, solar radiation, etc.).
GS heating
. **space heating (buildings)**
RT air conditioning
environmental engineering
heating equipment
residential energy
solar atriums
solar heating
solar houses
temperature control
waste energy utilization

space industrialization
GS **space industrialization**
. space manufacturing
. space processing
RT commercial spacecraft
economic development
energy conversion
industries
lunar mining
manufacturing
∞ processes
product development
products
research facilities
space commercialization

Space Infrared Telescope Facility
UF *SIRTF*
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **Space Infrared Telescope Facility**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Space Infrared Telescope Facility**
telescopes
. infrared telescopes
. . **Space Infrared Telescope Facility**
. spaceborne telescopes
. . **Space Infrared Telescope Facility**
RT infrared astronomy
spaceborne astronomy

space laboratories
GS laboratories
. **space laboratories**
. Advanced Technology Laboratory
. Atmospheric Cloud Physics Lab (Spacelab)
. Earth Viewing Applications Laboratory
. Long Duration Exposure Facility
. manned orbital laboratories
. . Skylab 1
. . Skylab 2
. . Skylab 3
. . Skylab 4
. . Spacelab
RT ∞ aerospace sciences
artificial satellites
geophysical satellites
lunar laboratories
Mir space station
orbital workshops
research facilities
research vehicles
SAIL project
Salyut space station
sortie systems
Space Station Freedom
space stations
spaceborne experiments
∞ spacecraft

space law
GS law (jurisprudence)
. international law
. . **space law**
RT air law
direct broadcast satellites
insurance (contracts)
outer space treaty
sabotage

space logistics
GS logistics
. **space logistics**
RT Automated Transfer Vehicle
consumables (spacecraft)
consumables (spacecrew supplies)
extraterrestrial resources
manned space flight
spacecraft cabin simulators

spacecrew transfer
stowage (onboard equipment)

space maintenance
GS maintenance
. **space maintenance**
RT astronaut training
∞ astronautics
extravehicular activity
orbital workers
payload transfer
remote manipulator system

space manufacturing
GS fabrication
. **space manufacturing**
manufacturing
. **space manufacturing**
space industrialization
. **space manufacturing**
RT aerospace environments
assembling
commercial spacecraft
construction
high vacuum
industries
levitation melting
liquid bridges
low gravity manufacturing
∞ microgravity applications
space commercialization
space processing
spaceborne experiments
technologies
vacuum effects
weightlessness

space mechanics
GS classical mechanics
. **space mechanics**
. . astrodynamics
. . celestial mechanics
. . orbital mechanics
. . . Kepler laws
. . . minimum variance orbit determination
RT flight mechanics
magnetohydrodynamics
orbital space tests
quadratures

space medicine
USE **aerospace medicine**

space missions
GS **space missions**
. Cassini mission
. Cluster Mission
. flyby missions
. . Giotto mission
. . Grand Tours
. . . Mariner Jupiter–Saturn flyby
. . . Mariner Jupiter–Uranus flyby
. . . Voyager 1977 mission
. . Comet Rendezvous Asteroid Flyby Mission
. . Mariner Venus–Mercury 1973
. . Mariner–Mercury 1973
. . Near Earth Asteroid Rendezvous Mission
. manned Mars missions
. Mars sample return missions
. SOHO Mission
. Solar Maximum Mission
. . Solar Maximum Mission–A
. asteroid missions
. Starprobe mission
. Ulysses mission
. . Comet Rendezvous Asteroid Flyby Mission
. . Near Earth Asteroid Rendezvous Mission
. . Rosetta mission
RT Apollo Soyuz test project
Chinese space program
Earth–Venus trajectories
European space programs
French space program
Indian space program
Japanese space program
Magellan project (NASA)
∞ missions
Skylab 1
Skylab 2
Skylab 3
Skylab 4
space programs
Space Shuttle missions
∞ spacecraft
TOPS (spacecraft)

space navigation
GS navigation
. **space navigation**
. . interplanetary navigation
RT air navigation
astrodynamics
∞ astronautics
astronavigation
autonomous navigation
celestial navigation
digital navigation
Earth–Venus trajectories
Global Positioning System
inertial navigation
interplanetary flight
interplanetary trajectories
manned spacecraft
orbital maneuvers
orbital mechanics
orbits
radar navigation
radio navigation
reference stars
satellite guidance
satellite navigation systems
spacecraft guidance
spacecraft position indicators
standardized space guidance

space observations (from Earth)
DEF Surveillance of extraterrestrial phenomena from the Earth's surface.
GS observation
. **space observations (from Earth)**
RT asteroid detection
astronomical interferometry
detection
radio observation
reconnaissance
seeing (astronomy)
space surveillance (ground based)
visual observation

Space Operations Center (NASA)
DEF A proposed NASA space station to be assembled in space that is designed for conducting space based operations such as satellite servicing, orbit transfer vehicle launch and recovery, and assembly of large space structures. Onboard capabilities could include space manufacturing and research experiments. When fully assembled it will be larger in size than the Space Shuttle.
GS artificial satellites
. space stations
. . **Space Operations Center (NASA)**
manned spacecraft
. **Space Operations Center (NASA)**
stations
. space stations
. . **Space Operations Center (NASA)**
RT large space structures
orbital assembly
orbital servicing

∞ **space orientation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT attitude (inclination)
bearing (direction)
vertical perception
visual perception

space perception
DEF The ability to estimate depth or distance between points in the field of vision. Used for depth perception, distance perception, form perception, and slant perception.
UF *depth perception*
distance perception
form perception
slant perception
GS perception
. sensory perception
. . visual perception
. . . **space perception**
. . . . autokinesis
RT binocular vision
monocular vision
peripheral vision
range finders
sound localization
visual fields

space photography
USE **spaceborne photography**

space plasma H/V interaction experiments
USE **SPHINX**

space plasmas
DEF Concentrations of free electrons and protons in the ionosphere, plasmasphere, and beyond.
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **space plasmas**
. . . . . solar wind
. . . . . stellar winds
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **space plasmas**
. . . . . solar wind
. . . . . stellar winds
RT AMPTE (satellites)
Cluster Mission
CRRES (satellite)
Earth magnetosphere
flux transfer events
galactic winds
geomagnetism
ionopause
magnetic field reconnection
magnetohydrodynamic stability
magnetohydrodynamics
OPEN Project
plasma density
plasma diagnostics

plasma interactions
plasma layers
plasma physics
plasma waves
plasma–electromagnetic interaction
polar cusps
SPHINX
wave–particle interactions

space platforms
DEF Gimbal-mounted platforms equipped with gyros and accelerometers for maintaining a desired orientation in inertial space independent of spacecraft motion.
GS **space platforms**
. Columbus space station
. Eureca (ESA)
. Long Duration Exposure Facility
. man tended free flyers
. space station polar platforms
. synchronous platforms
RT Earth Observing System (EOS)
intraorbit transfer vehicles
orbital servicing
∞ platforms
shape control
Space Station Freedom
space stations

space power reactors
GS auxiliary power sources
. nuclear auxiliary power units
. . **space power reactors**
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 50
. . . space power unit reactors
nuclear electric power generation
. nuclear auxiliary power units
. . **space power reactors**
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 50
. . . space power unit reactors
. nuclear power reactors
. . **space power reactors**
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 50
. . . space power unit reactors
nuclear reactors
. nuclear power reactors
. . **space power reactors**
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 50
. . . space power unit reactors
RT heat exchangers
space station power supplies
turbogenerators

space power unit reactors
UF *SPUR (reactors)*
GS auxiliary power sources
. nuclear auxiliary power units
. . space power reactors
. . . **space power unit reactors**
nuclear electric power generation
. nuclear auxiliary power units
. . space power reactors
. . . **space power unit reactors**
. nuclear power reactors
. . space power reactors
. . . **space power unit reactors**
nuclear reactors
. nuclear power reactors
. . space power reactors
. . . **space power unit reactors**
RT fission electric cells
heat exchangers
SNAP
SNAP 2
SNAP 4
SNAP 8
SNAP 50
turbogenerators

space probes
GS unmanned spacecraft
. **space probes**
. . Explorer 18 satellite
. . Giotto mission
. . Jupiter probes
. . . Galileo probe
. . . Galileo spacecraft
. . lunar probes
. . . Lunik lunar probes
. . . . Lunik 2 lunar probe
. . . . Lunik 3 lunar probe
. . . . Lunik 9 lunar probe
. . . . Lunik 10 lunar probe
. . . . Lunik 11 lunar probe
. . . . Lunik 12 lunar probe
. . . . Lunik 13 lunar probe
. . . . Lunik 14 lunar probe
. . . . Lunik 16 lunar probe
. . . . Lunik 17 lunar probe
. . . . Lunik 19 lunar probe
. . . . Lunik 20 lunar probe
. . . . Lunik 22 lunar probe
. . . Ranger lunar probes
. . . . Ranger 1 lunar probe
. . . . Ranger 2 lunar probe
. . . . Ranger 3 lunar probe
. . . . Ranger 4 lunar probe
. . . . Ranger 5 lunar probe
. . . . Ranger 6 lunar probe
. . . . Ranger 7 lunar probe
. . . . Ranger 8 lunar probe
. . . . Ranger 9 lunar probe
. . . . Ranger lunar landing vehicles
. . . Surveyor lunar probes
. . . . Surveyor 1 lunar probe
. . . . Surveyor 2 lunar probe
. . . . Surveyor 3 lunar probe
. . . . Surveyor 4 lunar probe
. . . . Surveyor 5 lunar probe
. . . . Surveyor 6 lunar probe
. . . . Surveyor 7 lunar probe
. . Mariner space probes
. . . Mariner 1 space probe
. . . Mariner 2 space probe
. . . Mariner 3 space probe
. . . Mariner 4 space probe
. . . Mariner 5 space probe
. . . Mariner 6 space probe
. . . Mariner 7 space probe
. . . Mariner 8 space probe
. . . Mariner 9 space probe
. . . Mariner 10 space probe
. . . Mariner 11 space probe
. . . Mariner R 2 space probe
. . Mariner spacecraft
. . . Mariner C spacecraft
. . . Mariner Venus 67 spacecraft
. . Mars probes
. . . Advanced Reconn Electric Spacecraft
. . . Mariner 3 space probe
. . . Mariner 4 space probe
. . . Mariner 6 space probe
. . . Mariner 7 space probe
. . . Mariner 8 space probe
. . . Mariner 9 space probe
. . . Mars 1 spacecraft
. . . Mars 2 spacecraft
. . . Mars 3 spacecraft
. . . Mars 4 Spacecraft
. . . Mars 5 spacecraft
. . . Mars 6 spacecraft
. . . Mars 7 spacecraft
. . . Mars Observer
. . . Mars Pathfinder
. . . Viking 1975 entry vehicle
. . . Viking spacecraft
. . . . Viking 1 spacecraft
. . . . . Viking lander 1
. . . . . Viking orbiter 1
. . . . Viking 2 spacecraft
. . . . . Viking lander 2
. . . . . Viking orbiter 2
. . . . Viking lander spacecraft
. . . . . Viking lander 1
. . . . . Viking lander 2
. . . . Viking orbiter spacecraft
. . . . . Viking orbiter 1
. . . . . Viking orbiter 2
. . . . . Viking orbiter 1975
. . . Zond 2 space probe
. . Pioneer space probes
. . . Pioneer 1 space probe
. . . Pioneer 2 space probe
. . . Pioneer 3 space probe
. . . Pioneer 4 space probe
. . . Pioneer 5 space probe
. . . Pioneer 6 space probe
. . . Pioneer 7 space probe
. . . Pioneer 8 space probe
. . . Pioneer 9 space probe
. . . Pioneer 10 space probe
. . . Pioneer 11 space probe
. . . Pioneer Venus 2 entry probes
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
. . solar probes
. . . Helios 1
. . . Helios 2
. . . Helios A
. . . Helios B
. . . Starprobe spacecraft
. . . Sunblazer space probe
. . Venus probes
. . . Magellan spacecraft (NASA)
. . . Mariner 1 space probe
. . . Mariner 2 space probe
. . . Mariner 5 space probe
. . . Mariner 10 space probe
. . . Pioneer Venus 2 spacecraft
. . . . Pioneer Venus 2 entry probes
. . . . . Pioneer Venus 2 night probe
. . . . . Pioneer Venus 2 sounder probe
. . . . Pioneer Venus 2 transporter bus
. . . Venera satellites
. . . . Venera 2 satellite
. . . . Venera 3 satellite
. . . . Venera 4 satellite
. . . . Venera 5 satellite

. . . . Venera 6 satellite
. . . . Venera 7 satellite
. . . . Venera 8 satellite
. . . . Venera 9 satellite
. . . . Venera 10 satellite
. . . . Venera 11 satellite
. . . . Venera 12 satellite
. . . Zond 1 space probe
. . . Zond 3 space probe
. . . Zond 4 space probe
. . . Zond 5 space probe
. . . Zond 6 space probe
. . . Zond 7 space probe
. . . Zond 8 space probe
. . Huygens probe
. . Voyager 1 spacecraft
. . Voyager 2 spacecraft
RT Atlas Able 5 launch vehicle
Cassini mission
interplanetary spacecraft
magnetic probes
maneuverable spacecraft
Mariner program
meteorological satellites
Pioneer project
Pioneer Venus 1 spacecraft
Pioneer Venus spacecraft
∞ probes
radio occultation
satellite television
Voyager 1977 mission
Voyager project

space processing
DEF Forming and fabrication techniques aboard a spacecraft in a weightless or low-gravity environment and involving improved chemical and/or physical procedures for the creation of new or better products.
GS space industrialization
. **space processing**
RT acoustic levitation
bioprocessing
commercial spacecraft
containerless melts
crystal growth
diamond films
electric furnaces
float zones
levitation melting
liquid bridges
low gravity manufacturing
Marangoni convection
metalorganic chemical vapor deposition
microgravity
∞ microgravity applications
miscibility gap
orbital workshops
protein crystal growth
single crystals
space commercialization
space manufacturing
spaceborne experiments
ultrapure metals

Space Processing Applications Rocket
DEF Sounding rocket used for space processing experiments by NASA. Used for SPAR (rocket).
UF *SPAR (rocket)*
RT launch vehicles
[illegible]
[illegible]
rocket vehicles
weightlessness

space programs
GS programs
. **space programs**
. . Argentine space program
. . Australian space program
. . Brazilian space program
. . Canadian space program
. . . Alouette project
. . Chinese space program
. . European space programs
. . . Austrian space program
. . . Belgian space program
. . . Czechoslovakian space program
. . . Danish space program
. . . Finnish space program
. . . French space program
. . . German space program
. . . Greek space program
. . . Hungarian space program
. . . Icelandic space program
. . . Italian space program
. . . Luxembourg space program
. . . Netherlands space program
. . . Norwegian space program
. . . Portuguese space program
. . . Russian Space Program
. . . . Proton launch vehicle
. . . Spanish space program
. . . Swedish space program
. . . Swiss space program
. . . Turkish space program
. . . U.S.S.R. space program
. . . UK space program
. . geographic applications program
. . Indian space program
. . Indonesian space program
. . Israeli space program
. . Japanese space program
. . Mexican space program
. . NASA space programs
. . . Apollo applications program
. . . Apollo project
. . . Bioastronautical Orbital Space System
. . . Centaur project
. . . Earth & Ocean Physics Applications Program
. . . Earth Resources Program
. . . . Earth Resources Survey Program
. . . . . SEASAT program
. . . Echo project
. . . Galileo project
. . . Gemini project
. . . Helios Project
. . . Jupiter project
. . . Magellan project (NASA)
. . . Mariner program
. . . . Mariner Venus–Mercury 1973
. . . . Mariner–Mercury 1973
. . . Mars 69 project
. . . Mars 71 project
. . . Mercury project
. . . National Launch Vehicle Program
. . . NEW MOONS project
. . . Nimbus project
. . . OPEN Project
. . . Pioneer project
. . . Project SETI
. . . Ranger project
. . . . Agena B Ranger Program
. . . Rover project
. . . SAIL project
. . . Saturn project
. . . Scout project
. . . Skylab program
. . . Starprobe mission
. . . Surveyor project
. . . Synchronous Communications Satellite Proj
. . . Tektite project
. . . TIROS project
. . . Titan project
. . . Vanguard project
. . . Viking Mars program
. . . Voyager project
. . New Zealand space program
. . Pakistan space program
. . Saudi Arabian space program
RT Apollo Soyuz test project
European Space Agency
International Space Year
ISRO
manned space flight
NASA programs
∞ research projects
Solar Maximum Mission
space missions

space psychology
GS medical science
. aerospace medicine
. . **space psychology**
psychology
. **space psychology**
RT astronaut performance
astronaut training
aviation psychology
manned space flight
military psychology
psychological effects
psychological factors
social factors
space adaptation syndrome
space flight stress
stress (psychology)

space radiation
USE **extraterrestrial radiation**

space radiators
USE **spacecraft radiators**

space rations
GS consumables (spacecrew supplies)
. **space rations**
rations
. **space rations**
RT ∞ food
food production (in space)
provisioning
stowage (onboard equipment)

space rendezvous
UF *spacecraft rendezvous*
GS rendezvous
. **space rendezvous**
. . orbital rendezvous
. . . Earth orbital rendezvous
. . . lunar orbital rendezvous
RT Apollo Soyuz test project
rendezvous trajectories
spacecraft docking
transfer orbits

space sciences
USE **aerospace sciences**

space self maneuvering units
USE **self maneuvering units**

Space Shuttle Ascent Stage
DEF Shuttle take–off configuration comprising the orbiter, solid rocket boosters, and external tank.
GS spacecraft configurations

. **Space Shuttle Ascent Stage**
RT Advanced Solid Rocket Motor (STS)
ascent propulsion systems
external tanks
Space Shuttle Boosters
Space Shuttle orbiters
Space Shuttle upper stages
space shuttles
stage separation

Space Shuttle Boosters
UF *Shuttle Boosters*
Solid Rocket Boosters (Space Shuttle)
Space Shuttle Solid Rocket Motors
SRB (Solid Rocket Boosters)
GS engines
. rocket engines
. . booster rocket engines
. . . **Space Shuttle Boosters**
. . . . Advanced Solid Rocket Motor (STS)
. . solid propellant rocket engines
. . . **Space Shuttle Boosters**
. . . . Advanced Solid Rocket Motor (STS)
RT∞ boosters
manned spacecraft
O ring seals
reusable spacecraft
Space Shuttle Ascent Stage

Space Shuttle Main Engine
DEF Liquid propellant propulsion system using fuel drawn from external tanks to provide power for the orbiter to attain orbital speed.
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **Space Shuttle Main Engine**
RT propulsion
space transportation system
Space Transportation System flights

Space Shuttle mission 31-A
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 31-A**
RT Columbia (Orbiter)

Space Shuttle mission 31-B
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 31-B**
RT Challenger (Orbiter)

Space Shuttle mission 31-C
UF *Space Shuttle Orbital Flight 7*
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 31-C**
RT Challenger (Orbiter)

Space Shuttle mission 31-D
UF *Space Shuttle Orbital Flight 8*
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 31-D**
RT Challenger (Orbiter)

Space Shuttle mission 41-A
UF *Space Shuttle Orbital Flight 9*
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 41-A**
RT Columbia (Orbiter)

Space Shuttle mission 41-B
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 41-B**
RT Challenger (Orbiter)

Space Shuttle mission 41-C
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 41-C**
RT Challenger (Orbiter)

Space Shuttle mission 41-D
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 41-D**
RT Discovery (Orbiter)

Space Shuttle mission 41-G
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 41-G**
RT Challenger (Orbiter)

Space Shuttle mission 51-A
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 51-A**
RT Discovery (Orbiter)

Space Shuttle mission 51-B
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 51-B**
RT Challenger (Orbiter)

Space Shuttle mission 51-C
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 51-C**
RT Discovery (Orbiter)

Space Shuttle mission 51-D
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 51-D**
RT Discovery (Orbiter)

Space Shuttle mission 51-E
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 51-E**
RT Challenger (Orbiter)

Space Shuttle mission 51-F
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 51-F**
RT Challenger (Orbiter)

Space Shuttle mission 51-G
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 51-G**
RT Discovery (Orbiter)
Saudi Arabian space program

Space Shuttle mission 51-H
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 51-H**
RT Atlantis (orbiter)

Space Shuttle mission 51-I
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 51-I**
RT Discovery (Orbiter)

Space Shuttle mission 51-J
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 51-J**
RT Atlantis (orbiter)

Space Shuttle mission 51-L
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 51-L**
RT Challenger (Orbiter)

Space Shuttle mission 61-A
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 61-A**
RT Challenger (Orbiter)
Columbia (Orbiter)

Space Shuttle mission 61-B
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 61-B**
RT Atlantis (orbiter)

Space Shuttle mission 61-C
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 61-C**
RT Columbia (Orbiter)

Space Shuttle mission 61-E
GS space flight
. manned space flight
. . Space Shuttle missions
. . . **Space Shuttle mission 61-E**
RT Columbia (Orbiter)

Space Shuttle missions
GS space flight
. manned space flight
. . **Space Shuttle missions**
. . . Space Shuttle mission 31-A
. . . Space Shuttle mission 31-B
. . . Space Shuttle mission 31-C
. . . Space Shuttle mission 31-D
. . . Space Shuttle mission 41-A
. . . Space Shuttle mission 41-B
. . . Space Shuttle mission 41-C
. . . Space Shuttle mission 41-D
. . . Space Shuttle mission 41-G
. . . Space Shuttle mission 51-A
. . . Space Shuttle mission 51-B
. . . Space Shuttle mission 51-C
. . . Space Shuttle mission 51-D
. . . Space Shuttle mission 51-E
. . . Space Shuttle mission 51-F
. . . Space Shuttle mission 51-G
. . . Space Shuttle mission 51-H
. . . Space Shuttle mission 51-I

. . . Space Shuttle mission 51–J
. . . Space Shuttle mission 51–L
. . . Space Shuttle mission 61–A
. . . Space Shuttle mission 61–B
. . . Space Shuttle mission 61–C
. . . Space Shuttle mission 61–E
RT Get Away Specials (STS)
∞ missions
space missions
space transportation system

Space Shuttle Orbital Flight 7
USE **Space Shuttle mission 31–C**

Space Shuttle Orbital Flight 8
USE **Space Shuttle mission 31–D**

Space Shuttle Orbital Flight 9
USE **Space Shuttle mission 41–A**

Space Shuttle Orbital Flight Test 1
USE **Space Transportation System 1 flight**

Space Shuttle Orbital Flight Test 2
USE **Space Transportation System 2 flight**

Space Shuttle Orbital Flight Test 3
USE **Space Transportation System 3 flight**

Space Shuttle Orbital Flight Test 4
USE **Space Transportation System 4 flight**

Space Shuttle Orbital Flight Tests
USE **Space Transportation System flights**

Space Shuttle Orbital Flights
USE **Space Transportation System flights**

Space Shuttle Orbiter 099
USE **Challenger (Orbiter)**

Space Shuttle Orbiter 101
USE **Enterprise (Orbiter)**

Space Shuttle Orbiter 102
USE **Columbia (Orbiter)**

Space Shuttle Orbiter 103
USE **Discovery (Orbiter)**

Space Shuttle Orbiter 104
USE **Atlantis (orbiter)**

Space Shuttle Orbiter 105
USE **Endeavour (orbiter)**

Space Shuttle orbiters
UF *Shuttle Orbiters*
GS manned spacecraft
. space shuttles
. . **Space Shuttle orbiters**
. . . Atlantis (orbiter)
. . . Challenger (Orbiter)
. . . Columbia (Orbiter)
. . . Discovery (Orbiter)
. . . Endeavour (orbiter)
. . . Enterprise (Orbiter)
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . space shuttles
. . . . **Space Shuttle orbiters**
. . . . . Atlantis (orbiter)
. . . . . Challenger (Orbiter)
. . . . . Columbia (Orbiter)
. . . . . Discovery (Orbiter)
. . . . . Endeavour (orbiter)
. . . . . Enterprise (Orbiter)
RT Inertial Upper Stage
manned space flight
microwave scanning beam landing system
payload integration plan
Shuttle Derived Vehicles
Space Shuttle Ascent Stage
space transportation system
spacecraft recovery
terminal area energy management

Space Shuttle payloads
GS payloads
. **Space Shuttle payloads**
. . Advanced Technology Laboratory
. . Astro missions (STS)
. . Atmospheric General Circulation Experiment
. . Earth radiation budget experiment
. . Earth Viewing Applications Laboratory
. . electromagnetic environment experiment
. . Get Away Specials (STS)
. . Halogen Occultation Experiment
. . OSS–1 payload
. . OSTA–1 payload
. . OSTA–3 payload
. . Physics and Chemistry Experiment in Space
. . plasma interaction experiment
. . Spacelab
. . X Ray Astrophysics Facility
RT commerce lab
extravehicular activity
Feature Identification and Location Exper
Hubble Space Telescope
orbital servicing
payload assist module
payload integration
payload integration plan
Shuttle Imaging Radar
sortie systems
space station payloads
space technology experiments
space transportation system
spaceborne experiments
Starlab

Space Shuttle Solid Rocket Motors
USE **Space Shuttle Boosters**

Space Shuttle upper stage A
DEF A version of a spinning solid upper stage centered around an Atlas Centaur launch vehicle. Used for SSUS–A.
UF *SSUS–A*
GS Space Shuttle upper stages
. **Space Shuttle upper stage A**
RT Atlas Centaur launch vehicle

Space Shuttle upper stage D
DEF A version of a spinning solid upper stage centered around a Delta launch vehicle. Used for SSUS–D.
UF *SSUS–D*
GS Space Shuttle upper stages
. **Space Shuttle upper stage D**
RT Delta launch vehicle
solid propellant rocket engines
spin stabilization

Space Shuttle upper stages
DEF A collective term for the various types of upper stages planned for the Space Shuttle.
GS **Space Shuttle upper stages**
. Space Shuttle upper stage A
. Space Shuttle upper stage D
. spinning solid upper stage
RT Space Shuttle Ascent Stage

space shuttles
GS manned spacecraft
. **space shuttles**
. . Buran space shuttle
. . Hermes manned spaceplane
. . Space Shuttle orbiters
. . . Atlantis (orbiter)
. . . Challenger (Orbiter)
. . . Columbia (Orbiter)
. . . Discovery (Orbiter)
. . . Endeavour (orbiter)
. . . Enterprise (Orbiter)
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . **space shuttles**
. . . . Buran space shuttle
. . . . Hermes manned spaceplane
. . . . Space Shuttle orbiters
. . . . . Atlantis (orbiter)
. . . . . Challenger (Orbiter)
. . . . . Columbia (Orbiter)
. . . . . Discovery (Orbiter)
. . . . . Endeavour (orbiter)
. . . . . Enterprise (Orbiter)
RT Advanced Launch System (STS)
AEPS
Aeromaneuvering Orbit to Orbit Shuttle
annular suspension and pointing system
approach and landing tests (STS)
Assess program
auxiliary propulsion
BESS (satellite)
Columbus space station
entry guidance (STS)
Eureca (ESA)
expendable stages (spacecraft)
German Infrared Laboratory
HOTOL launch vehicle
Inertial Upper Stage
interim stages (spacecraft)
International Space Station
intraorbit transfer vehicles
LIRTS (telescope)
manned space flight
Orbit Maneuvering Engine (Space Shuttle)
orbit transfer vehicles
orbital maneuvers
payload control
payload deployment & retrieval system
payload retrieval (STS)
SAIL project
Shuttle Derived Vehicles
Shuttle Engineering Simulator
Shuttle pallet satellites
single stage to orbit vehicles
sortie systems
Space Shuttle Ascent Stage
space transportation system
Space Transportation System flights
∞ spacecraft
spacecraft recovery
Spacelab

space simulators
DEF Devices used to simulate one or more parameters of the space environment used for testing space systems or components. Specifically, a closed chamber capable of approximating the vacuum and normal environments of space. Used for orbital simulators.
UF *orbital simulators*
GS simulators
. environment simulators
. . **space simulators**
. . . High Vacuum Orbital Simulator
. . . Langley complex coordinator
RT centrifuges
flight simulators
neutral buoyancy simulation
solar simulators
spacecraft environments
vacuum chambers

Space Station Freedom
(added August 1991)
UF *Freedom Space Station*
GS artificial satellites
. space stations
. . **Space Station Freedom**
stations
. space stations
. . **Space Station Freedom**
RT Columbus space station
International Space Station
large space structures
NASA space programs
orbital servicing
space laboratories
space platforms
space station payloads
space station polar platforms
space station power supplies
space station propulsion
space station structures

space station payloads
GS payloads
. **space station payloads**
RT Earth Observing System (EOS)
man tended free flyers
Space Shuttle payloads
Space Station Freedom
space station polar platforms
space stations
Spacelab payloads

space station polar platforms
UF *polar platforms (space stations)*
GS artificial satellites
. space stations
. . **space station polar platforms**
space platforms
. **space station polar platforms**
stations
. space stations
. . **space station polar platforms**
RT Columbus space station
Earth Observing System (EOS)
polar orbits
remote sensing
Space Station Freedom
space station payloads

space station power supplies
GS electric power supplies
. **space station power supplies**
RT electric batteries
energy storage
solar arrays
solar cells
solar dynamic power systems
space power reactors
Space Station Freedom
space stations
spacecraft power supplies
thermoelectric generators

space station propulsion
GS propulsion
. **space station propulsion**
RT auxiliary propulsion
electric propulsion
hydrogen oxygen engines
ion engines
low thrust propulsion
propulsion system configurations
resistojet engines
solar electric propulsion
Space Station Freedom
space stations
spacecraft propulsion

space station structures
RT Kvant modules
large space structures
orbital assembly
Priroda module
smart structures
space erectable structures
Space Station Freedom
space stations
spacecraft structures
structural design
∞ structures

space stations
UF *Earth orbiting space stations*
manned orbital space stations
MOSS (space stations)
self deploying space stations
GS artificial satellites
. **space stations**
. . Automatic Universal Orbiting Stations
. . Columbus space station
. . Halo Orbit space station
. . International Space Station
. . man tended free flyers
. . Mir space station
. . . Kvant modules
. . . Priroda module
. . orbiting lunar stations
. . Salyut space station
. . Skylab 1
. . Skylab 2
. . Skylab 3
. . Skylab 4
. . Space Operations Center (NASA)
. . Space Station Freedom
. . space station polar platforms
stations
. **space stations**
. . Automatic Universal Orbiting Stations
. . Columbus space station
. . Halo Orbit space station
. . International Space Station
. . man tended free flyers
. . Mir space station
. . . Kvant modules
. . . Priroda module
. . orbiting lunar stations
. . Salyut space station
. . Skylab 1
. . Skylab 2
. . Skylab 3
. . Skylab 4
. . Space Operations Center (NASA)
. . Space Station Freedom
. . space station polar platforms
RT AEPS
bioastronautics
ferry spacecraft
inflatable structures
large space structures
low earth orbits
manned orbital laboratories
manned spacecraft
military spacecraft
orbital servicing
orbital space tests
orbital workshops
∞ platforms
rendezvous spacecraft
Saturn 1 workshop
Saturn 5 workshop
Saturn workshops
sortie systems
space bases
space colonies
space habitats
space laboratories
space platforms
space station payloads
space station power supplies
space station propulsion
space station structures
spacecraft docking
spin stabilization
X-38 crew return vehicle

space storage
RT cryogenic fluid storage
cryogenic rocket propellants
propellant storage
storable propellants
∞ storage
storage tanks

space suits
DEF Pressure suits for wear in space or at very low ambient pressures within the atmosphere, designed to permit the wearer to leave the protection of a pressurized cabin.
GS clothing
. protective clothing
. . pressure suits
. . . **space suits**
. . . . extravehicular mobility units
. suits
. . pressure suits
. . . **space suits**
. . . . extravehicular mobility units
RT safety devices

∞ **space surveillance**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT **space surveillance (ground based)**
space surveillance (spaceborne)

space surveillance (ground based)
GS surveillance
. **space surveillance (ground based)**
RT air defense
antimissile defense
asteroid detection
minitrack system
space observations (from Earth)
∞ space surveillance
spacecraft tracking

space surveillance (spaceborne)
GS surveillance

. **space surveillance (spaceborne)**
RT air defense
antimissile defense
high altitude nuclear detection
ice mapping
ice reporting
military spacecraft
optical countermeasures
reconnaissance
satellite-borne photography
satellite-to-satellite tracking
∞ space surveillance
spacecraft tracking

space systems engineering
USE **aerospace engineering**

space technology experiments
RT antenna design
antennas
large space structures
space erectable structures
Space Shuttle payloads
spaceborne experiments

space temperature
GS temperature
. **space temperature**
RT cryogenic temperature
electron energy
ion temperature

space tools
GS tools
. **space tools**
RT low gravity manufacturing
orbital workers
telerobotics

space transportation
GS transportation
. **space transportation**
. . space transportation system
. . . Advanced Launch System (STS)
. . . Saenger space transportation system
RT Delta Clipper
HOPE aerospace plane
HOTOL launch vehicle
Inertial Upper Stage
Japanese space program
orbit transfer vehicles
payload stations
payloads
single stage to orbit vehicles
terminal area energy management

space transportation system
DEF A joint NASA-DOD advanced space transportation concept for the 1980s. The main element of the STS is the Space Shuttle. Another element is the orbit transfer vehicles-OTV. A third element called Spacelab is designed and manufactured by the European Space Agency, has no propulsive capability and is carried by the Space Shuttle. Used for STS.
UF *STS*
GS transportation
. space transportation
. . **space transportation system**
. . . Advanced Launch System (STS)
. . . Saenger space transportation system
RT Advanced Solid Rocket Motor (STS)
annular suspension and pointing system
approach and landing tests (STS)
Atmospheric General Circulation Experiment
defense program
extravehicular mobility units
Hermes manned spaceplane
Inertial Upper Stage
manned maneuvering units
NASA programs
orbital servicing
OSS-1 payload
OSTA-1 payload
OSTA-2 payload
OSTA-3 payload
payload assist module
payload delivery (STS)
payload integration plan
payload retrieval (STS)
power modules (STS)
remote manipulator system
Space Shuttle Main Engine
Space Shuttle missions
Space Shuttle orbiters
Space Shuttle payloads
space shuttles
Space Transportation System flights
space tugs
Spacelab
∞ systems

Space Transportation System 1 flight
UF *OFT 1*
Orbital Flight Test 1 (shuttle)
Space Shuttle Orbital Flight Test 1
STS-1
GS Space Transportation System flights
. **Space Transportation System 1 flight**

Space Transportation System 2 flight
UF *OFT 2*
Orbital Flight Test 2 (shuttle)
Space Shuttle Orbital Flight Test 2
STS-2
GS Space Transportation System flights
. **Space Transportation System 2 flight**

Space Transportation System 3 flight
UF *OFT 3*
Orbital Flight Test 3 (shuttle)
Space Shuttle Orbital Flight Test 3
STS-3
GS Space Transportation System flights
. **Space Transportation System 3 flight**

Space Transportation System 4 flight
UF *OFT 4*
Orbital Flight Test 4 (shuttle)
Space Shuttle Orbital Flight Test 4
STS-4
GS Space Transportation System flights
. **Space Transportation System 4 flight**

Space Transportation System flights
DEF Revised collective designation for all Space Shuttle flights. Used for OFT, orbital flight tests (shuttle), Space Shuttle orbital flight tests, and Space Shuttle orbital flights.
UF *OFT*
orbital flight tests (shuttle)
Space Shuttle Orbital Flight Tests
Space Shuttle Orbital Flights
GS **Space Transportation System flights**
. Space Transportation System 1 flight
. Space Transportation System 2 flight
. Space Transportation System 3 flight
. Space Transportation System 4 flight
RT entry guidance (STS)
geophysical fluid flow cells
Solar Cell Calibration Facility
space flight
Space Shuttle Main Engine
space shuttles
space transportation system
∞ systems
∞ tests

space tugs
RT inertial Upper Stage
modules
orbit transfer vehicles
orbital servicing
payloads
propulsion
space transportation system
spacecraft propulsion

space vehicle checkout program
UF *spacecraft prelaunch tests*
RT checkout
countdown
performance tests
prefiring tests
spacecraft maintenance
∞ tests

space vehicle control
USE **spacecraft control**

space vehicles
USE **spacecraft**

space weapons
GS weapons
. **space weapons**
RT air to air missiles
antimissile missiles
Chaparral missile
laser weapons
Minuteman ICBM
nuclear weapons
surface to air missiles
weapon systems
weapons delivery

space-time continuum
USE **relativity**

space-time functions
UF *space-time metric*
GS functions (mathematics)
. **space-time functions**
RT light-cone expansion
Minkowski space
naked singularities
relativity
Yang-Mills theory

space-time metric
USE **space-time functions**

spaceborne astronomy
GS astronomy
. **spaceborne astronomy**
RT Astro missions (STS)
astronomical interferometry
astronomical satellites
Cosmic Background Explorer satellite
faint object camera
Gamma Ray Observatory
Granat satellite
Hipparcos satellite
Hubble Space Telescope
Infrared Space Observatory (ISO)
IUE

Magellan ultraviolet astronomy satellite
Pinhole Occulter Facility
Quasat
ROSAT mission
SAS–2
SAS–3
SOFIA (airborne observatory)
Space Infrared Telescope Facility
Starsat telescope
telescopes
ultraviolet telescopes
X Ray Astrophysics Facility

spaceborne experiments
DEF A collective term designating the various experiments performed or planned in orbiting spacecraft and usually involving physical phenomena in space environments.
GS **spaceborne experiments**
. Orbiting Frog Otolith
. Physics and Chemistry Experiment in Space
. plasma interaction experiment
RT aerospace environments
AMPTE (satellites)
bioprocessing
CRRES (satellite)
experimentation
geophysical fluid flow cells
Get Away Specials (STS)
International Space Station
Long Duration Exposure Facility
man tended free flyers
molecular shields
OSS–1 payload
OSTA–1 payload
OSTA–3 payload
payload assist module
payload integration plan
payloads
space laboratories
space manufacturing
space processing
Space Shuttle payloads
space technology experiments
Spacelab
weightlessness

spaceborne lasers
GS stimulated emission devices
. lasers
. . **spaceborne lasers**
RT airborne lasers
laser applications
remote sensors

spaceborne photography
UF *space photography*
GS imagery
. photography
. . **spaceborne photography**
. . . satellite-borne photography
RT aerial photography
astronomical photography
black and white photography
cloud photographs
cloud photography
diffraction limited cameras
Earth resources
lunar photographs
lunar photography
Mars photographs
multispectral band scanners
photomapping
photomaps
rocket-borne photography
satellite observation

spaceborne telescopes
GS telescopes
. **spaceborne telescopes**
. . German Infrared Laboratory
. . Hubble Space Telescope
. . Infrared Space Observatory (ISO)
. . Large Deployable Reflector
. . LIRTS (telescope)
. . solar optical telescope
. . Space Infrared Telescope Facility
. . Starlab
. . Starsat telescope
. . X Ray Astrophysics Facility
RT Astro missions (STS)
astronomical observatories
astronomical photography
astronomy
diffraction limited cameras
faint object camera
Gamma Ray Observatory
multi-anode microchannel arrays
optical transfer function
ROSAT mission

∞ **spacecraft**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Devices, manned and unmanned, which are designed to be placed into an orbit about the Earth or into a trajectory to another celestial body. Used for space vehicles.
UF *space vehicles*
RT Advanced Reconn Electric Spacecraft
aerospace vehicles
air data systems
Astro vehicle
astrodynamics
Atlantis (orbiter)
auxiliary propulsion
biosatellites
Canadian spacecraft
cargo spacecraft
Challenger (Orbiter)
Chinese spacecraft
Clementine spacecraft
Columbia (Orbiter)
Czechoslovakian spacecraft
Discovery (Orbiter)
dual spin spacecraft
Endeavour (orbiter)
Enterprise (Orbiter)
ESA spacecraft
escape rockets
expandable structures
flexible spacecraft
flight test vehicles
French space program
Galileo probe
Galileo spacecraft
ground support equipment
hypersonic vehicles
Indian space program
Indian spacecraft
inflatable spacecraft
interplanetary spacecraft
Israeli spacecraft
Japanese space program
Japanese spacecraft
launch vehicles
lunar spacecraft
Magellan spacecraft (NASA)
manned spacecraft
manned orbital laboratories
manned spacecraft
Mariner Mark 2 Spacecraft
Mark 1 spacecraft
military spacecraft
orbit transfer vehicles
orbital maneuvering vehicles
orbiting lunar stations
outer planets explorers
photo reconnaissance spacecraft
Pioneer Venus 2 spacecraft
power limited spacecraft
Radiation Meteoroid spacecraft
recoverable spacecraft
reentry vehicles
research vehicles
∞ satellites
SERT 1 spacecraft
SERT 2 spacecraft
Shuttle Derived Vehicles
soft landing spacecraft
Solar Maximum Mission–A
solettas
Soviet spacecraft
space capsules
space debris
space laboratories
space missions
space shuttles
spacecraft cabin simulators
spacecraft modules
technology feasibility spacecraft
test vehicles
TOPS (spacecraft)
transatmospheric vehicles
unidentified flying objects
unmanned spacecraft
∞ vehicles
Viking orbiter 1
Viking orbiter 2
Viking orbiter spacecraft
Voyager 1 spacecraft
Voyager 2 spacecraft
X–30 vehicle

spacecraft antennas
GS antennas
. **spacecraft antennas**
radio equipment
. **spacecraft antennas**
telecommunication
. **spacecraft antennas**
RT furlable antennas

spacecraft breakup
(added August 1989)
UF *breakup (spacecraft)*
orbital breakup
reentry breakup
satellite breakup
satellite fragmentation
RT atmospheric entry
destruction
hazards
meteoroid hazards
orbit decay
reentry effects
space debris
spacecraft reentry
spacecraft survivability
uncontrolled reentry (spacecraft)
wreckage

spacecraft cabin atmospheres
GS controlled atmospheres
. cabin atmospheres
. . **spacecraft cabin atmospheres**
RT carbon dioxide concentration
closed ecological systems
cockpits
environmental control

high pressure oxygen
pressurized cabins
rebreathing

spacecraft cabin simulators
GS simulators
. training simulators
. . **spacecraft cabin simulators**
training devices
. training simulators
. . **spacecraft cabin simulators**
RT aerospace environments
cockpit simulators
manned spacecraft
simulation
space flight training
space logistics
∞ spacecraft
test facilities

spacecraft cabins
GS compartments
. **spacecraft cabins**
spacecraft components
. **spacecraft cabins**
RT ∞ cabins
cockpits
crew experiment stations
crew observation stations
crew workstations
pressurized cabins
space capsules

spacecraft charging
DEF Electric charge induction upon the surface of a spacecraft by magnetospheric plasmas or other ion sources.
RT electric fields
external surface currents
single event upsets
spacecraft glow
system generated electromagnetic pulses

Spacecraft Charging at High Altitude
USE **SCATHA satellite**

spacecraft communication
SN (COMMUNICATION OF SPACECRAFT WITH GROUND OR OTHER SPACECRAFT)
GS telecommunication
. space communication
. . **spacecraft communication**
. . . reentry communication
. . . satellite communication
RT ARPA computer network
astronics
circumlunar communication
Earth terminals
facsimile communication
ground–air–ground communication
hoop column antennas
interplanetary communication
lunar communication
optical communication
packet transmission
plasma arrays
radio communication
satellite communications ships
satellite ground support
single channel per carrier transmission
system generated electromagnetic pulses
unified S band
wireless communication

spacecraft components
GS **spacecraft components**
. service modules
. spacecraft cabins
. spacecraft docking modules
. spacecraft modules
. . command modules
. . command service modules
. . landing modules
. . . lunar landing modules
. . . . Lunar Module
. . . . . Apollo lunar experiment module
. . . . . LSSM
. . . . . Lunar Module 5
. . . . . Lunar Module 7
. . . Mars Excursion Module
. . SIM
RT airborne/spaceborne computers
boron–epoxy composites
commonality
∞ components
nose cones
rocket engines

spacecraft computers
USE **airborne/spaceborne computers**

spacecraft configurations
GS **spacecraft configurations**
. satellite configurations
. Space Shuttle Ascent Stage
RT aerodynamic configurations
aircraft configurations
Apollo short stack
∞ configurations
flared bodies
launch vehicle configurations
propulsion system configurations
Radiation Meteoroid spacecraft
reentry vehicles
upper stage rocket engines

spacecraft construction materials
RT ∞ construction materials
functionally gradient materials
Ludox (trademark)
∞ materials

spacecraft contamination
GS contamination
. **spacecraft contamination**
RT decontamination
exobiology

spacecraft control
UF *space vehicle control*
GS **spacecraft control**
. satellite control
. . satellite attitude control
RT attitude control
automatic control
∞ control
control simulation
crew procedures (preflight)
engine control
flexible spacecraft
flight control
fly by wire control
ground based control
manual control
Marquardt R4D engine
missile control
pointing control systems
radio control
remote control
rocket engine control
shape control
stationkeeping
thrust vector control
visual control

spacecraft defense
DEF The protection of spacecraft from undesirable external forces. Used for satellite defense.
UF *satellite defense*
RT spacecraft survivability
vulnerability

spacecraft design
GS **spacecraft design**
. IPAD
. satellite design
RT Advanced Launch System (STS)
computer aided design
∞ design
engine design
Hermes manned spaceplane
Indian space program
Japanese space program
lofting
product development
satellite temperature
Shuttle Derived Vehicles
space debris
spacecraft temperature
structural design
systems engineering
transatmospheric vehicles
weight reduction

spacecraft docking
DEF The act of coupling two or more orbiting objects; the operation of mechanically connecting together, or in some manner bring together orbital payloads. Used for docking.
UF *docking*
GS maneuvers
. **spacecraft docking**
RT ∞ astronautics
interception
Mir space station
mooring
multiple docking adapters
orbital rendezvous
rendezvous trajectories
Salyut space station
space rendezvous
space stations
transfer orbits

spacecraft docking modules
GS modules
. **spacecraft docking modules**
spacecraft components
. **spacecraft docking modules**
RT airlock modules
command modules
command service modules
landing modules
service modules

spacecraft electronic equipment
GS electronic equipment
. **spacecraft electronic equipment**
onboard equipment
. spacecraft equipment
. . **spacecraft electronic equipment**
RT airborne/spaceborne computers
astronics
single event upsets

spacecraft environments
(added August 1989)
SN (LIMITED TO SPACECRAFT INTERNAL COMPARTMENTS AND CABINS; FOR SPACECRAFT EXTERNAL ENVIRONMENTS REFER TO 'EXTRATERRESTRIAL ENVIRONMENTS')
GS environments

. **spacecraft environments**
RT aerospace medicine
Automatic Universal Orbiting Stations
bioastronautics
closed ecological systems
controlled atmospheres
environmental control
exobiology
extraterrestrial environments
intravehicular activity
life support systems
rotating environments
satellite temperature
space simulators
thermal environments
weightlessness

spacecraft equipment
GS onboard equipment
. **spacecraft equipment**
. . spacecraft electronic equipment
RT ∞ equipment
OSTA-3 payload
spacecraft instruments

spacecraft glow
UF *shuttle glow*
GS decay
. **spacecraft glow**
emission
. light emission
. . luminescence
. . . **spacecraft glow**
RT Earth orbital environments
spacecraft charging
surface reactions

spacecraft guidance
GS guidance (motion)
. **spacecraft guidance**
. . satellite guidance
RT automatic control
autonomous navigation
CCD star tracker
celestial navigation
command guidance
ground based control
inertial guidance
injection guidance
interplanetary flight
interplanetary trajectories
laser gyroscopes
manual control
midcourse guidance
orbits
reentry guidance
rendezvous guidance
space flight
space navigation
star trackers
terminal guidance

spacecraft instruments
UF *spacecraft sensors*
GS **spacecraft instruments**
. satellite instruments
. . multispectral linear arrays
. spacecraft position indicators
RT astrionics
Atmospheric Cloud Physics Lab (Spacelab)
autonomous spacecraft clocks
bubble technique
flight instruments
flight test instruments
guidance sensors
I2S cameras
instrument packages
∞ instruments
laser altimeters
measuring instruments
onboard equipment
spacecraft equipment

spacecraft landing
GS landing
. **spacecraft landing**
. . horizontal spacecraft landing
. . lunar landing
. . planetary landing
. . . Mars landing
RT aircraft landing
approach and landing tests (STS)
crash landing
glide landings
hard landing
landing simulation
soft landing
soft landing spacecraft
terminal area energy management
touchdown
vertical landing
water landing

spacecraft launching
UF *satellite launching*
GS launching
. **spacecraft launching**
. . liftoff (launching)
RT countdown
heavy lift launch vehicles
HOTOL launch vehicle
launch costs
launch dates
launch vehicles
launch windows
launching pads
missiles
orbit insertion
orbital launching
orbital shots
postlaunch reports
prelaunch summaries
railgun accelerators
reusable launch vehicles
rocket launching
space commercialization

spacecraft lubrication
UF *space environmental lubrication*
GS lubrication
. **spacecraft lubrication**
RT self lubricating materials

spacecraft maintenance
GS maintenance
. **spacecraft maintenance**
RT checkout
prelaunch tests
space vehicle checkout program
spacecraft reliability
turnaround (STS)

spacecraft maneuvers
UF *satellite maneuvers*
GS maneuvers
. **spacecraft maneuvers**
. . orbital maneuvers
RT control simulation
maneuverability
maneuverable spacecraft
orbit insertion
space flight

spacecraft models
GS models
. **spacecraft models**
RT aircraft models
dynamic models
mathematical models
scale models

spacecraft modules
GS modules
. **spacecraft modules**
. . command modules
. . command service modules
. . landing modules
. . . lunar landing modules
. . . . Luner Module
. . . . . Apollo lunar experiment module
. . . . . LSSM
. . . . . Lunar Module 5
. . . . . Lunar Module 7
. . . Mars Excursion Module
. . SIM
spacecraft components
. **spacecraft modules**
. . command modules
. . command service modules
. . landing modules
. . . lunar landing modules
. . . . Lunar Module
. . . . . Apollo lunar experiment module
. . . . . LSSM
. . . . . Lunar Module 5
. . . . . Lunar Module 7
. . . Mars Excursion Module
. . SIM
RT compartments
man tended free flyers
orbital assembly
service modules
space capsules
space erectable structures
∞ spacecraft

spacecraft motion
SN (NONTRAJECTORY MOTION)
RT aerodynamic balance
aerodynamic stability
attitude stability
buffeting
control stability
dynamic stability
flexible spacecraft
flutter
∞ motion
motion stability
oscillations
sideslip
stability
tumbling motion
vibration

spacecraft orbital assembly
USE **orbital assembly**

spacecraft orbits
GS orbits
. **spacecraft orbits**
. . satellite orbits
. . . geosynchronous orbits
. . . parking orbits
. . . polar orbits
. . . stationary orbits
. . . twenty-four hour orbits
. . transfer orbits
. . . interplanetary transfer orbits
. . Trojan orbits
RT circular orbits
Earth orbits

elliptical orbits
equatorial orbits
lunar orbits
orbit insertion
orbital mechanics
orbital position estimation
planetary orbits
retrograde orbits
solar orbits

spacecraft performance
RT astronaut performance
∞ performance
postlaunch reports

spacecraft position indicators
GS display devices
. position indicators
. . **spacecraft position indicators**
measuring instruments
. indicating instruments
. . position indicators
. . . **spacecraft position indicators**
spacecraft instruments
. **spacecraft position indicators**
RT flight instruments
head-up displays
orbital position estimation
space navigation

spacecraft power supplies
GS electric power supplies
. **spacecraft power supplies**
RT auxiliary power sources
cryocycle principle
direct power generators
electric batteries
∞ energy sources
free-piston engines
laser power beaming
microwave power beaming
nickel hydrogen batteries
nuclear auxiliary power units
power beaming
power modules (STS)
∞ power supplies
propellants
solar dynamic power systems
space station power supplies
thermophotovoltaic conversion

spacecraft prelaunch tests
USE **space vehicle checkout program**

spacecraft propulsion
GS propulsion
. **spacecraft propulsion**
. . electromagnetic propulsion
. . . magnetic sails
. . electrostatic propulsion
. . . ion propulsion
. . matter-antimatter propulsion
. . negative matter propulsion
. . photonic propulsion
. . . laser propulsion
. . plasma propulsion
. . solar propulsion
. . . solar electric propulsion
. . . solar thermal propulsion
RT chemical propulsion
descent propulsion systems
electric propulsion
laser propulsion
low thrust propulsion
magnetoplasmadynamics
mass drivers
nuclear electric propulsion
nuclear propulsion
oxygen-hydrocarbon rocket engines
post boost propulsion system
propellants
rocket engines
Rover project
solar sails
space flight
space station propulsion
space tugs

spacecraft radiators
UF *space radiators*
GS heat radiators
. **spacecraft radiators**
RT condensers (liquefiers)
cooling
cooling systems
radiative heat transfer
solar reflectors

spacecraft recovery
UF *satellite capture*
snatching
RT booster recovery
Discoverer recovery capsules
recoverable spacecraft
∞ recovery
recovery parachutes
recovery zones
rescue operations
reusable launch vehicles
Space Shuttle orbiters
space shuttles
water landing

spacecraft reentry
GS atmospheric entry
. reentry
. . **spacecraft reentry**
. . . uncontrolled reentry (spacecraft)
RT Earth-Venus trajectories
entry guidance (STS)
flight mechanics
hypersonic reentry
lifting reentry vehicles
manned reentry
return to Earth space flight
satellite lifetime
spacecraft breakup

spacecraft reliability
GS reliability
. **spacecraft reliability**
RT circuit reliability
component reliability
controllability
prelaunch problems
quality control
spacecraft maintenance

spacecraft rendezvous
USE **space rendezvous**

spacecraft sensors
USE **spacecraft instruments**

spacecraft shielding
GS shielding
. **spacecraft shielding**
RT heat shielding
∞ insulated structures
meteoroid protection
nose cones
radiation shielding
radio frequency shielding
reentry shielding
reusable heat shielding
safety devices
solar radiation shielding

spacecraft stability
UF *satellite attitude disturbance*
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . **spacecraft stability**
stability
. dynamic stability
. . motion stability
. . . **spacecraft stability**
RT aerodynamic balance
aerodynamic stability
attitude stability
buffeting
control stability
counterbalances
directional stability
Discos (satellite attitude control)
dual spin spacecraft
lateral stability
liquid sloshing
longitudinal stability
low speed stability
nutation dampers
satellite perturbation
tumbling motion
wind tunnel stability tests

spacecraft sterilization
GS cleaning
. sterilization
. . **spacecraft sterilization**
decontamination
. **spacecraft sterilization**
RT chemical sterilization
ethylene oxide
exobiology
planetary quarantine
purification
sterilization effects

spacecraft structures
RT aircraft structures
folding structures
fuel tanks
large space structures
meteoroid protection
orbital assembly
rocket engines
satellite design
smart structures
space erectable structures
space station structures
structural design
∞ structures

spacecraft survivability
DEF The ability of a spacecraft to survive adverse conditions including reentry problems.
RT aircraft survivability
spacecraft breakup
spacecraft defense
survival
uncontrolled reentry (spacecraft)
vulnerability

spacecraft television
GS communication equipment
. **spacecraft television**
. . digital spacecraft television
. . Ranger block 3 television system
. . **satellite television**
telecommunication
. **spacecraft television**
. . digital spacecraft television
. . Ranger block 3 television system

. . satellite television
television systems
. **spacecraft television**
. . digital spacecraft television
. . Ranger block 3 television system
. . satellite television
RT color television
satellite transmission
stereotelevision
television transmission

spacecraft temperature
GS **spacecraft temperature**
. satellite temperature
RT heat pipes
spacecraft design
temperature control

spacecraft tracking
GS tracking (position)
. **spacecraft tracking**
. . satellite tracking
. . . satellite-to-satellite tracking
RT Advanced Range Instrumentation Ship
Deep Space Network
minitrack system
missile tracking
optical tracking
polystation doppler tracking system
radar tracking
radio tracking
space detection and tracking system
space surveillance (ground based)
space surveillance (spaceborne)
tracking networks
tracking stations
transponder control group
unified S band

Spacecraft Tracking and Data Network
USE **STDN (network)**

spacecraft trajectories
GS trajectories
. **spacecraft trajectories**
. . interplanetary trajectories
. . . Earth-Mars trajectories
. . . Earth-Mercury trajectories
. . . Earth-Venus trajectories
. . lunar trajectories
. . . circumlunar trajectories
. . . Earth-Moon trajectories
. . . moon-Earth trajectories
RT ascent trajectories
descent trajectories
Earth orbital rendezvous
flight mechanics
Goddard Trajectory Determination System
hyperbolic trajectories
interorbital trajectories
lunar orbital rendezvous
∞ motion
orbital rendezvous
radio occultation
reentry trajectories
rendezvous trajectories
round trip trajectories
swingby technique

spacecrew transfer
UF *intervehicle spacecrew transfer*
RT Apollo Soyuz test project
command modules
manned space flight
rendezvous spacecraft
space logistics

spacecrews
GS personnel
. crews
. . flight crews
. . . **spacecrews**
. flying personnel
. . flight crews
. . . **spacecrews**
RT astronauts
cosmonauts
crew experiment stations
crew observation stations
crew procedures (inflight)
crew procedures (preflight)
crew workstations
space habitats
toilets

Spacelab
GS laboratories
. space laboratories
. . manned orbital laboratories
. . . **Spacelab**
manned spacecraft
. manned orbital laboratories
. . **Spacelab**
payloads
. Space Shuttle payloads
. . **Spacelab**
RT Advanced Technology Laboratory
annular suspension and pointing system
EXPOS (Spacelab payload)
geophysical fluid flow cells
German Infrared Laboratory
Get Away Specials (STS)
GRIST (telescope)
LIRTS (telescope)
NASA programs
OSTA-2 payload
SEPAC (payload)
Skylab program
space shuttles
space transportation system
spaceborne experiments
Starlab

Spacelab payloads
DEF A general, collective term for the diverse and numerous ESA payloads planned for space experiments.
GS payloads
. **Spacelab payloads**
. . AMPS (satellite payload)
. . Atmospheric Cloud Physics Lab (Spacelab)
. . Atmospheric General Circulation Experiment
. . geophysical fluid flow cells
. . Solar Cell Calibration Facility
RT annular suspension and pointing system
Astro missions (STS)
Get Away Specials (STS)
sortie systems
space station payloads

Spacelab simulation flights
USE **Assess program**

Spacelab UV-Optical Telescope Facility
USE **Starlab**

spacers
RT bushings
dividers
fasteners
inserts
isolators
separators
spacing
washers (spacers)

spacetennas
DEF The transmitting antennas of a solar power satellite transmission system which directs the high-power beam from space to a focus on the rectennas on Earth.
GS antennas
. radio antennas
. . microwave antennas
. . . **spacetennas**
microwave equipment
. microwave antennas
. . **spacetennas**
radio equipment
. radio antennas
. . microwave antennas
. . . **spacetennas**
RT microwave transmission
rectennas

spacing
GS **spacing**
. aircraft approach spacing
RT altitude control
attitude control
clearances
intervals
isolation
positioning
∞ separation
spacers
thickness

SPADATS (tracking system)
USE **space detection and tracking system**

Spain
GS nations
. **Spain**
. . Canary Islands
RT Andorra
Europe
Gibraltar
Pyrenees Mountains (Europe)
Spanish Sahara
Spanish space program

spallation
GS nuclear radiation
. **spallation**
nuclear reactions
. **spallation**
RT particle production

spalling
DEF Spontaneous separation of a surface layer from a metal.
RT chipping
flaking
fracturing
fragmentation
wear
wear tests

∞ **span**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aspect ratio
dimensions
life span
width
wing span

Spanish Sahara
RT Africa
nations
Spain

Spanish space program
(added March 1989)
GS programs
. space programs
. . European space programs
. . . **Spanish space program**
RT Spain

spanloader aircraft
DEF Advanced distributed–load cargo aircraft configurations in which the payloads are distributed across the span of the wing for a close match between aerodynamic and inertial loading for minimal bending stresses.
GS transport aircraft
. cargo aircraft
. . **spanloader aircraft**
RT ∞ aircraft
supercritical wings
swept wings

spanwise blowing
GS blowing
. **spanwise blowing**
RT cross flow
externally blown flaps
jet flow
lift augmentation
pressure distribution
tangential blowing
wing span

SPAR (rocket)
USE **Space Processing Applications Rocket**

spare parts
RT ∞ components
damage assessment
downtime
engine parts
inventory management
logistics management
maintenance
modules
redundant components
retirement for cause

spark chambers
GS ionization chambers
. **spark chambers**
measuring instruments
. counters
. . radiation counters
. . . **spark chambers**
. radiation measuring instruments
. . radiation counters
. . . **spark chambers**
RT bubble chambers
∞ chambers
cloud chambers
electric sparks
neutron counters

spark discharges
USE **electric sparks**

spark gaps
GS gaps
. **spark gaps**
RT arc generators
dielectrics
electric fields
electric sparks
electrical faults
multipactor discharges
potential gradients
trigatrons

spark ignition
GS ignition
. **spark ignition**
RT combustion
electric ignition
electric sparks
eudiometers

spark machining
UF *electroerosion*
electrostatic erosion
GS cutting
. **spark machining**
machining
. **spark machining**
RT electroforming
erosion
metal cutting
piercing

spark plugs
RT arc generators
combustion chambers
electric sparks
igniters
ignition systems
internal combustion engines

spark shadowgraph photography
USE **shadowgraph photography**

sparks
GS **sparks**
. **electric sparks**
RT ignition

Sparrow 2 missile
GS missiles
. air to air missiles
. . Sparrow missiles
. . . **Sparrow 2 missile**
RT solid propellant rocket engines

Sparrow 3 missile
GS missiles
. air to air missiles
. . Sparrow missiles
. . . **Sparrow 3 missile**
RT liquid propellant rocket engines

Sparrow missiles
GS missiles
. air to air missiles
. . **Sparrow missiles**
. . . Sparrow 2 missile
. . . Sparrow 3 missile
RT solid propellant rocket engines

Spartan missile
GS missiles
. antimissile missiles
. . **Spartan missile**
RT Nike–Zeus missile
Sentinel system
Sprint missile
surface to air missiles

Spartan satellites
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **Spartan satellites**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Spartan satellites**
RT astrophysics
solar physics
ultraviolet astronomy

SPAS (ESA platforms)
USE **Shuttle pallet satellites**

spasms
GS muscular function
. **spasms**
RT contraction
involuntary actions
muscles

spatial dependencies
GS dependence
. **spatial dependencies**
RT mathematical models
∞ space
time dependence

spatial distribution
UF *Moliere formula*
spatial isotropy
GS distribution (property)
. **spatial distribution**
. . horizontal distribution
. . vertical distribution
. . . star distribution
. . geographic distribution
RT anisotropy
ion distribution
meteoroid concentration
particle density (concentration)
position (location)
satellite constellations
stereochemistry
teleconnections (meteorology)
temporal distribution

spatial filtering
GS filtration
. **spatial filtering**
RT aberration
attenuation
augmentation
blurring
∞ filters
holography
images
∞ noise
photographs
photointerpretation
plane waves
resolution
speckle holography

spatial isotropy
USE **isotropy**
spatial distribution

spatial marching
DEF Techniques for solving partial differential equations that move along in a space direction.
RT acoustic ducts
duct geometry
numerical analysis
time marching

spatial orientation
USE **attitude (inclination)**

spatial resolution
DEF The precision with which an optical instrument can produce separable images of different points on an object.
GS resolution
. **spatial resolution**
RT atmospheric correction
high resolution
image processing
image resolution
imaging techniques
spectral resolution
temporal resolution

SPDL
USE **document markup languages**

species diffusion
GS diffusion
. **species diffusion**
RT biological diversity
evolution (development)
genetics
geographic distribution

specific gravity
USE **density (mass/volume)**

specific heat
DEF The ratio of the heat absorbed (or released) by unit mass of a system to the corresponding temperature rise (or fall). Used for Debye temperature and heat capacity.
UF *Debye temperature*
heat capacity
GS heat
. **specific heat**
. thermodynamic properties
. . thermophysical properties
. . **specific heat**
RT enthalpy
equipartition theorem
Gruneisen constant
heat budget
heat of fusion
ion temperature
Lewis numbers
melting points
neel temperature
thermal conductivity
thermal resistance

specific impulse
GS impulses
. **specific impulse**
RT mass flow rate
propellant mass ratio
propellants
propulsion system performance
propulsive efficiency
rocket propellants
rocket thrust
thermodynamic efficiency
thrust

specifications
DEF Precise statements or sets of requirements to be satisfied by materials, products, systems, or services.
GS **specifications**
. aircraft specifications
. equipment specifications
. functional design specifications
RT aircraft performance
commonality
drawings
inspection
maintenance
∞ materials tests
mechanical properties
naming
performance tests
process control (industry)
procurement
quality
quality control
reliability
requirements
standardization
standards
technical writing
tolerances (mechanics)
user requirements

specimen geometry
GS geometry
. **specimen geometry**
RT fatigue tests
load tests
mechanical properties
tensile tests

specimens
RT Mars surface samples
samples
sampling

speckle holography
DEF An imaging technique whereby a speckle pattern results from laser illumination of a diffusely reflecting surface when interference occurs between the fields passing through the various portions of lens aperture. Information about the motion of an object can then be obtained from the imaged fringes resulting from the translation of two speckle patterns.
GS imagery
. photography
. . holography
. . . **speckle holography**
imaging techniques
. **speckle holography**
RT coherent light
diffraction patterns
holography
holographic interferometry
image correlators
laser applications
scatter plates (optics)
spatial filtering
speckle interferometry
speckle patterns

speckle interferometry
DEF An imaging process whereby the pattern on the image plane of an interferometer is the result of interference between two mutually coherent, but randomly speckled, fields of two, lens formed images from laser illuminated, diffusely reflecting surfaces.
GS interferometry
. **speckle interferometry**
RT diffraction patterns
Fresnel diffraction
Fresnel reflectors
infrared interferometers
isochromatics
laser applications
null zones
plasma flux measurement
Sagnac effect
scatter plates (optics)
speckle holography

speckle patterns
RT diffraction patterns
holography
laser outputs
light scattering
∞ patterns
speckle holography
surface roughness effects

spectra
UF *optical spectrum*
GS **spectra**
. atomic spectra
. continuous spectra
. energy spectra
. . electronic spectra
. . neutron spectra
. mass spectra
. molecular spectra
. . electronic spectra
. . Raman spectra
. . rotational spectra
. . vibrational spectra
. noise spectra
. oxygen spectra
. plasma spectra
. power spectra
. . cepstra
. radiation spectra
. . absorption spectra
. . . Fraunhofer lines
. . . Herzberg bands
. . . telluric lines
. . electromagnetic spectra
. . . gamma ray spectra
. . . infrared spectra
. . . line spectra
. . . . Balmer series
. . . . D lines
. . . . electronic spectra
. . . . Fraunhofer lines
. . . . H lines
. . . . . H alpha line
. . . . . H beta line
. . . . . H gamma line
. . . . K lines
. . . . Lyman spectra
. . . . Paschen series
. . . . Rydberg series
. . . . telluric lines
. . . radio spectra
. . . . microwave spectra
. . . Raman spectra
. . . stellar spectra
. . . . solar spectra
. . . UBV spectra
. . . ultraviolet spectra
. . . vibrational spectra
. . . visible spectrum
. . . x ray spectra
. . emission spectra
. shock spectra
. spectral bands
. . absorption spectra
. . . Fraunhofer lines
. . . Herzberg bands
. . . telluric lines
. . diffuse interstellar bands
. . photoluminescent bands
. . Schumann–Runge bands
. . Swan bands
. . Vegard–Kaplan bands
RT astronomical spectroscopy
color
excitons
flux density

gamma ray spectrometers
isoelectronic sequence
spectral sensitivity
spectral shift control
spectral theory
spectrograms
spectrographs
spectrometers
spectroscopy
spectrum analysis
transition probabilities

spectral absorption
USE **absorption spectra**

spectral analysis
USE **spectrum analysis**

spectral bands
GS spectra
. **spectral bands**
. . absorption spectra
. . . Fraunhofer lines
. . . Herzberg bands
. . . telluric lines
. . diffuse interstellar bands
. . photoluminescent bands
. . Schumann–Runge bands
. . Swan bands
. . Vegard–Kaplan bands
RT band ratioing
∞ bands
electronic spectra
energy bands
frequencies
line spectra
visible spectrum
white noise

spectral correlation
GS correlation
. **spectral correlation**
RT electromagnetic spectra
spectrophotography

spectral emission
GS emission
. **spectral emission**
RT continuous spectra
electromagnetic radiation
emittance
incandescence
light emission
line spectra
nongray gas
∞ radiation
spectrograms
spectroscopy
spectrum analysis
spontaneous emission
ultraviolet emission
wavelengths

spectral energy distribution
GS distribution (property)
. energy distribution
. . **spectral energy distribution**
RT ∞ distribution
electromagnetic radiation
energy spectra
fine structure
line spectra

spectral line width
GS bandwidth
. **spectral line width**
RT line spectra
oscillator strengths

spectral lines
USE **line spectra**

spectral methods
RT computational fluid dynamics
differential equations
∞ methodology
spectrum analysis

spectral noise
USE **white noise**

spectral reconnaissance
GS reconnaissance
. **spectral reconnaissance**
RT Earth resources
electromagnetic spectra
multispectral band scanners
multispectral photography
multispectral radar
photoreconnaissance
radar photography
satellite-borne photography
spectrophotography

spectral reflectance
DEF The ratio of the reflected flux to the spectrally homogeneous incident flux.
GS electromagnetic properties
. optical properties
. . reflectance
. . . **spectral reflectance**
surface properties
. **spectral reflectance**
RT bidirectional reflectance
imaging spectrometers
leaf area index
plant stress
spectrometers
spectroscopy
spectrum analysis
vegetative index

spectral resolution
GS resolution
. **spectral resolution**
RT analog computers
Landsat 6
Landsat 7
line spectra
Q factors
radar resolution
radiometric resolution
spatial resolution
spectrum analysis

spectral sensitivity
DEF In electronics, radiant sensitivity considered as a function of wavelength, or in physics, the response of a device or material to monochromatic light as a function of wavelength; also known as spectral response.
GS sensitivity
. **spectral sensitivity**
RT frequency response
instrument errors
photothermal conversion
spectra

spectral shift control
DEF Type of reactor moderator control in which the neutron spectrum is intentionally changed.
RT ∞ control
spectra

spectral shift control reactor
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . pressurized water reactors
. . . . **spectral shift control reactor**
RT ∞ control

spectral signatures
GS signatures
. **spectral signatures**
. . microwave signatures
RT cepstral analysis
chemical analysis
chemical composition
crop identification
emission spectra
identifying
optical measurement
spectrum analysis

spectral theory
RT Lyman spectra
spectra
∞ theories

spectrograms
RT line spectra
spectra
spectral emission
spectrographs
spectrophotography
spectroscopy
spectrum analysis

spectrographs
GS **spectrographs**
. high dispersion spectrographs
RT spectra
spectrograms
spectrometers
spectroscopic analysis
spectroscopy

spectroheliographs
DEF Instruments for taking photographs (spectroheliograms) of the image of the sun in monochromatic light. The wavelength of light chosen for this purpose corresponds to one of the Fraunhofer lines, usually the light of hydrogen or ionized calcium. Used for heliographs, heliography, and spectroheliosopes.
UF *heliographs*
heliography
spectroheliosopes
GS imagery
. **spectroheliographs**
measuring instruments
. radiation measuring instruments
. . actinometers
. . . **spectroheliographs**
. spectrometers
. . **spectroheliographs**
optical equipment
. **spectroheliographs**
solar instruments
. **spectroheliographs**
RT black and white photography
coronagraphs
solar spectrometers
Starsat telescope

spectroheliosopes
USE **spectroheliographs**

spectrometers
UF *spectroscopes*
GS measuring instruments
. **spectrometers**
. . Ebert spectrometers
. . Fabry–Perot spectrometers

. . gamma ray spectrometers
. . imaging spectrometers
. . infrared spectrometers
. . . filter wheel infrared spectrometers
. . laser spectrometers
. . mass spectrometers
. . microwave spectrometers
. . neutron spectrometers
. . Solar Backscatter UV Spectrometer
. . solar spectrometers
. . spectroheliographs
. . time of flight spectrometers
. . ultraviolet spectrometers
. . . high dispersion spectrographs
. . . Total Ozone Mapping Spectrometer
. . x ray spectrometers
RT actinometers
chemical analysis
diffractometers
electron probes
goniometers
infrared spectroscopy
Michelson interferometers
optical equipment
optical measurement
photogoniometers
photographic measurement
photometers
radiation counters
solar instruments
spectra
spectral reflectance
spectrographs
spectroradiometers
spectroscopic analysis
spectroscopy
spectrum analysis

spectrometry
USE **spectroscopy**

spectrophotography
GS imagery
. photography
. . **spectrophotography**
spectroscopy
. **spectrophoto_ aphy**
RT black and white photography
ground truth
spectral correlation
spectral reconnaissance
spectrograms

spectrophotometers
GS measuring instruments
. optical measuring instruments
. . **spectrophotometers**
. . . infrared spectrophotometers
. . . ultraviolet spectrophotometers
. radiation measuring instruments
. . actinometers
. . . **spectrophotometers**
. . . . infrared spectrophotometers
. . . . ultraviolet spectrophotometers
optical equipment
. optical measuring instruments
. . **spectrophotometers**
. . . infrared spectrophotometers
. . . ultraviolet spectrophotometers
RT chemical analysis
duochromators
monochromators
optical measurement
photometers
radiometers
spectroradiometers
spectroscopic analysis
spectroscopy

spectrophotometry
GS optical measurement
. photometry
. . **spectrophotometry**
. . . stellar spectrophotometry
spectroscopy
. **spectrophotometry**
. . stellar spectrophotometry
RT astronomical photometry
colorimetry
imaging spectrometers
spectroscopic analysis

spectrophotovoltaics
DEF The enhancement of solar cell productivity by concentrating and subdividing the sunlight spectrum and focusing on specific spectrum efficient solar cells.
RT energy conversion efficiency
energy spectra
solar cells
solar collectors

spectropolarimeters
USE **polarimeters**

spectroradiometers
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . **spectroradiometers**
RT spectrometers
spectrophotometers

spectroscopes
USE **spectrometers**

spectroscopic analysis
SN (FOR SPECTROSCOPIC TOOLS IN CHEMICAL ANALYSIS)
GS chemical tests
. chemical analysis
. . **spectroscopic analysis**
spectroscopy
. **spectroscopic analysis**
RT Auger spectroscopy
auroral spectroscopy
electrophotometry
flame spectroscopy
Fraunhofer line discriminators
gas spectroscopy
infrared spectroscopy
laser spectroscopy
magnetic spectroscopy
mass spectroscopy
metallicity
microanalysis
molecular spectroscopy
neutron activation analysis
nuclear radiation spectroscopy
photoelectron spectroscopy
qualitative analysis
quantitative analysis
Raman spectroscopy
spectrographs
spectrometers
spectrophotometers
spectrophotometry
ultraviolet spectroscopy
vacuum spectroscopy
x ray spectroscopy

spectroscopic telescopes
UF *diffraction telescopes*
GS telescopes
. **spectroscopic telescopes**
. . multispectral tracking telescopes
. . stratoscope telescopes
RT astronomical spectroscopy
reflecting telescopes
refracting telescopes
stellar spectrophotometry

spectroscopy
UF *spectrometry*
GS **spectroscopy**
. absorption spectroscopy
. . optogalvanic spectroscopy
. astronomical spectroscopy
. . stellar spectrophotometry
. Auger spectroscopy
. auroral spectroscopy
. electron spectroscopy
. flame spectroscopy
. gas spectroscopy
. holographic spectroscopy
. infrared spectroscopy
. ion mobility spectroscopy
. magnetic spectroscopy
. mass spectroscopy
. . secondary ion mass spectrometry
. molecular spectroscopy
. . Raman spectroscopy
. nuclear radiation spectroscopy
. optical emission spectroscopy
. . laser spectroscopy
. . . optogalvanic spectroscopy
. photoacoustic spectroscopy
. photoelectron spectroscopy
. radio spectroscopy
. spectrophotography
. spectrophotometry
. . stellar spectrophotometry
. spectroscopic analysis
. ultrasonic spectroscopy
. ultraviolet spectroscopy
. vacuum spectroscopy
. x ray spectroscopy
RT chemical analysis
cinespectrographs
colorimetry
electrophotometry
Fraunhofer line discriminators
isoelectronic sequence
Lallemand cameras
∞ optics
photometry
pressure broadening
spectra
spectral emission
spectral reflectance
spectrograms
spectrographs
spectrometers
spectrophotometers
spectrum analysis
time of flight spectrometers
visible spectrum
x ray spectrometers
Zeeman effect

spectrum analysis
UF *spectral analysis*
GS **spectrum analysis**
. cepstral analysis
. flame spectroscopy
. maximum entropy method
RT absorption spectra
∞ analyzing
emission spectra
frequency analyzers
frequency scanning

gamma ray spectrometers
holographic spectroscopy
hyperfine structure
Kramers–Kronig formula
laser spectroscopy
line spectra
magnetic resonance
optical resonance
signal analysis
spectra
spectral emission
spectral methods
spectral reflectance
spectral resolution
spectral signatures
spectrograms
spectrometers
spectroscopy
Stark effect
toroidal discharge
ultrasonic spectroscopy
ultraviolet spectroscopy
Zeeman effect

specular reflection
DEF Reflection in which the reflected radiation is not diffused; reflection as from a mirror.
GS reflection
. **specular reflection**
RT diffuse radiation
stalons
glare
mirrors

speech
GS **speech**
. articulation (speech)
. conversation
. phonemes
. phonetics
. talking
RT acoustics
auditory perception
consonants (speech)
English language
languages
lectures
linguistics
phonemics
public speaking
semantics
sentences
syntax
voice
voice communication
words (language)

speech baseband compression
DEF Technique for reducing the bandwidth required to represent the human voice waveform.
GS compressing
. **speech baseband compression**
RT bandwidth
vocoders
voice communication
waveforms

speech defects
GS defects
. **speech defects**
RT articulation (speech)
phonemics
phonetics

speech discrimination
USE **speech recognition**

speech recognition
UF *speech discrimination*
GS intelligibility
. **speech recognition**
recognition
. **speech recognition**
RT cepstral analysis
linguistics
phonemes
phonemics
phonetics
sensory discrimination
voice control

speeches
USE **lectures**

speed
USE **velocity**

speed control
UF *speed regulation*
RT automatic control
∞ control
control equipment
controllers
engine control
helicopter control
manual control
regulators

speed indicators
UF *Preston tubes*
speedometers
GS display devices
. **speed indicators**
. . tachometers
measuring instruments
. indicating instruments
. . **speed indicators**
. . . tachometers
RT accelerometers
aircraft instruments
anemometers
approach indicators
flight instruments
flowmeters
landing instruments
pitot tubes
velocity measurement

speed regulation
USE **speed control**

speed regulators
UF *governors*
GS control equipment
. regulators
. . **speed regulators**
RT controllers
engines

speedometers
USE **speed indicators**

spent fuels
DEF Nuclear reactor fuels irradiated to the extent that they no longer can effectively sustain a chain reaction.
GS fuels
. nuclear fuels
. . **spent fuels**
RT fuel capsules
neutron sources
∞ nuclear energy
nuclear fuel reprocessing
reactor materials
recycling

spermatocytes
USE **gametocytes**

spermatogenesis
RT abiogenesis
gametocytes
spermatozoa

spermatozoa
GS cells (biology)
. gametocytes
. . **spermatozoa**
RT fertilization
spermatogenesis

Spert reactors
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . boiling water reactors
. . . . **Spert reactors**
. nuclear research and test reactors
. . **Spert reactors**

SPF (materials)
USE **superplastic forming**

sphalerite
USE **zincblende**

spheres
GS symmetrical bodies
. bodies of revolution
. . **spheres**
. . . celestial sphere
. . . concentric spheres
. . . falling spheres
. . . Poincare spheres
. . . rotating spheres
RT aerodynamic configurations
asphericity
balls
circles (geometry)
Euclidean geometry
geometry
∞ globes
globules
∞ hemispheres
hemispherical shells
microballoons
nodules
ogives
spherical shells
spheroids
spherules

spherical antennas
GS antennas
. **spherical antennas**
RT communication equipment
electronic equipment

spherical caps
GS shells (structural forms)
. spherical shells
. . **spherical caps**
RT ∞ caps
coverings
nose cones
seals (stoppers)

spherical coordinates
DEF A system of curvilinear coordinates in which the position of a point in space is designated by its distance from the origin or pole (the radius vector), the angle phi between the radius vector and a vertically directed polar axis (the cone angle or coaltitude) and the angle theta between the plane of the phi and a fixed meridian

plane through the polar axis (the polar angle or longitude). Used for curvilinear coordinates.
UF *curvilinear coordinates*
GS coordinates
. **spherical coordinates**
RT astronomical coordinates
celestial reference systems
geocentric coordinates
planetocentric coordinates
polar coordinates
position (location)
∞ reference systems

spherical harmonics
GS analysis (mathematics)
. complex variables
. . **spherical harmonics**
functions (mathematics)
. **spherical harmonics**
harmonics
. **spherical harmonics**
RT Legendre functions

spherical plasmas
DEF Confined circular plasmas.
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **spherical plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **spherical plasmas**

spherical shells
GS shells (structural forms)
. **spherical shells**
. . spherical caps
RT bodies of revolution
circular shells
hemispherical shells
metal shells
reinforced shells
rotating spheres
spheres
stressed-skin structures
thin walled shells

spherical tanks
GS tanks (containers)
. **spherical tanks**
RT fuel tanks
pressure vessels
propellant tanks
storage tanks

spherical waves
RT cylindrical waves
diffraction paths
diffraction propagation
elastic waves
electromagnetic radiation
Huygens principle
plane waves
point sources
three dimensional flow
∞ waves

spheroids
DEF Ellipsoids; figure resembling spheres.
GS geometry
. Euclidean geometry
. . analytic geometry
. . . **spheroids**
. . . . oblate spheroids
. . . . prolate spheroids
RT falling spheres
geoids
spheres

spheromaks
DEF Toroidal fusion reactors.
GS nuclear reactors
. fusion reactors
. . **spheromaks**
RT dense plasmas
magnetic field configurations
magnetic mirrors
plasma control
plasma currents
∞ reactors
tokamak devices
toroidal plasmas

spherules
GS **spherules**
. spherulites
RT crystals
spheres

spherulites
GS crystals
. crystallites
. . **spherulites**
spherules
. **spherulites**
RT crystal structure
microcrystals
microstructure
nodules
rosette shapes

SPHINX
SN (SPACE PLASMA HIGH VOLTAGE INTERACTION EXPERIMENTS)
UF *space plasma H/V interaction experiments*
RT NASA programs
plasma interaction experiment
plasma-particle interactions
plasmas (physics)
∞ research projects
space plasmas

sphygmography
RT arteries
bioinstrumentation
blood pressure
heart rate
∞ measurement
recording instruments

spicules
DEF Bright spikes extending into the chromosome of the sun from below.
GS stellar activity
. solar activity
. . **spicules**
RT chromosphere
photosphere
solar atmosphere

spiders
GS animals
. invertebrates
. . arthropods
. . . **spiders**

spike antennas
USE **monopole antennas**

spike nozzles
GS exhaust nozzles
. **spike nozzles**
RT aerospike engines
conical nozzles
nozzle geometry
∞ nozzles
plug nozzles
rocket nozzles
∞ spikes

spike potentials
GS potential energy
. electric potential
. . **spike potentials**
RT bioelectricity
depolarization
∞ spikes

∞ **spikes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT fasteners
holders
monopole antennas
pins
spike nozzles
spike potentials
spikes (aerodynamic configurations)

spikes (aerodynamic configurations)
RT ∞ spikes
wind tunnels

spiking
RT electron beam welding
melting
metal cutting

spilling
RT dumping
emptying
jettisoning
oil slicks
releasing
spreading

spin
GS **spin**
. metal spinning
. . hydrospinning
. particle spin
. . electron spin
. . isotopic spin
. . nuclear spin
. spin-orbit interactions
. . electron capture
. spin-spin coupling
RT angular momentum
nuclear capture
∞ spinners
yo-yo devices

spin decoupling
GS decoupling
. **spin decoupling**
RT photomagnetic effects

spin dynamics
RT aircraft spin
artificial gravity
dynamic tests
∞ dynamics
electron spin
gyration
lunar rotation
rotating matter

spin exchange
GS exchanging
. **spin exchange**
RT resonance charge exchange

spin forging
USE **metal spinning**

spin glass
DEF A magnetic alloy in which the concentration of magnetic atoms is such that below a certain temperature their magnetic moments are no longer able to fluctuate thermally in time but are still directed at random in loose analogy to the atoms of ordinary glass.
GS glass
. **spin glass**
RT amorphous materials
magnetic properties
metallic glasses
spin–lattice relaxation
superconductivity

spin reduction
UF *despinning*
jet damping
GS rates (per time)
. acceleration (physics)
. . deceleration
. . . **spin reduction**
RT angular acceleration
destabilization
gravity gradient satellites
∞ reduction
satellite rotation
yo–yo devices

spin resonance
GS resonance
. **spin resonance**
RT nuclear magnetic resonance
particle spin

spin stabilization
DEF Directional stability of a spacecraft obtained by the action of gyroscopic forces which result from spinning the body about its axis of symmetry.
GS stabilization
. **spin stabilization**
RT attitude control
coning motion
dual spin spacecraft
missiles
OV–1 satellites
OV–2 satellites
OV–3 satellites
OV–4 satellites
OV–5 satellites
satellite orientation
satellite rotation
Space Shuttle upper stage D
space stations
∞ spinners

spin temperature
SN (LIMITED TO ASTROPHYSICS)
GS temperature
. **spin temperature**
RT absorption spectra
astrophysics
hydrogen clouds
interstellar gas
interstellar matter

spin tests
UF *whirling tests*
RT angular momentum
dynamic tests
environmental tests
load tests
polarization (spin alignment)
∞ tests
whirl towers

spin waves
USE **magnons**

spin–lattice relaxation
GS magnetic properties
. magnetic relaxation
. . **spin–lattice relaxation**
relaxation (mechanics)
. **spin–lattice relaxation**
RT lattice vibrations
nuclear magnetic resonance
relaxation time
spin glass

spin–orbit interactions
GS nuclear reactions
. nuclear interactions
. . **spin–orbit interactions**
. . . electron capture
particle interactions
. nuclear interactions
. . **spin–orbit interactions**
. . . electron capture
spin
. **spin–orbit interactions**
. . electron capture
RT ∞ interactions

spin–spin coupling
GS coupling
. **spin–spin coupling**
spin
. **spin–spin coupling**
RT couples
cross relaxation

spinach
GS farm crops
. **spinach**
plants (botany)
. **spinach**
vegetables
. **spinach**
RT ∞ food

spinal cord
GS anatomy
. nervous system
. . central nervous system
. . . **spinal cord**
RT bones
brain
neuroglia
spine

spindles
RT shafts (machine elements)
spools
winding

spine
UF *vertebral column*
GS anatomy
. musculoskeletal system
. . bones
. . . **spine**
. . . . vertebrae
RT sciatic region
spinal cord

spinel
GS minerals
. **spinel**
RT aluminates
ferrites
igneous rocks

∞ **spinners**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT antenna components
fairings
slewing
spin
spin stabilization

spinning (metallurgy)
USE **metal spinning**

spinning solid upper stage
DEF Space Shuttle upper stage designed for launching of satellites not requiring the full capacity of the interim upper stage; does not require inertial guidance system nor three–axis stabilization; can handle payloads of the class now launched by Delta or Atlas/ Centaur.
GS Space Shuttle upper stages
. **spinning solid upper stage**
RT booster rocket engines
upper stage rocket engines

spinning unguided rocket trajectory
UF *SPURT (trajectories)*
GS trajectories
. **spinning unguided rocket trajectory**
RT equations of motion
missile trajectories
rotating bodies
symmetrical bodies

spinor groups
GS algebra
. lie groups
. . **spinor groups**
geometry
. differential geometry
. . lie groups
. . . **spinor groups**

spiral antennas
GS antennas
. **spiral antennas**
. . log spiral antennas
RT antenna design
broadband
telemetry

spiral galaxies
GS celestial bodies
. galaxies
. . **spiral galaxies**
. . . Andromeda Galaxy
. . . barred galaxies
. . . Milky Way Galaxy
RT corotation
density wave model
disk galaxies
elliptical galaxies
galactic bulge
galactic halos
local group (astronomy)
Maffei galaxies
peculiar galaxies
ring galaxies
Seyfert galaxies
Virgo galactic cluster

spiral wrapping
RT composite materials
composite wrapping
isotensoid structures
packaging
∞ spirals
winding

spirals
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT curves (geometry)
∞ helices
spiral wrapping
spirals (concentrators)

spirals (concentrators)
GS concentrators
. **spirals (concentrators)**
separators
. **spirals (concentrators)**
RT classifiers
∞ spirals

spirometers
RT heart minute volume
lungs
respiratory rate

Spitsbergen (Norway)
RT archipelagoes
Arctic Ocean
ocean currents

splashing
UF *swash*
RT agitation
surface waves
ullage
water landing

spleen
GS anatomy
. **spleen**
RT polycythemia

splicing
RT fasteners
∞ joining
∞ tapes
wiring

spline functions
GS functions (mathematics)
. **spline functions**
RT approximation
matrix methods

splines
RT couplings
fasteners
holders

splints
RT bones
casts
first aid

split flaps
GS airfoils
. flaps (control surfaces)
. . **split flaps**
brakes (for arresting motion)
. aerodynamic brakes
. . **split flaps**
. aircraft brakes
. . **split flaps**
control surfaces
. flaps (control surfaces)
. . **split flaps**
drag devices
. aerodynamic brakes
. . **split flaps**
RT jet flaps
leading edge slats
trailing edge flaps
wing flaps

splits (geology)
USE **geological faults**

splitting
GS **splitting**
. flux difference splitting
. flux vector splitting
. water splitting
RT chipping
cutting
fission
flaking
fracturing
laser cutting
∞ separation
slicing

spodumene
GS aluminum compounds
. **spodumene**
chalcogenides
. oxides
. . silicon oxides
. . . **spodumene**
lithium compounds
. **spodumene**
minerals
. **spodumene**
silicon compounds
. silicates
. . sodium silicates
. . . **spodumene**
. silicon oxides
. . **spodumene**
sodium compounds
. sodium silicates
. . **spodumene**

spoiler slot ailerons
GS airfoils
. ailerons
. . **spoiler slot ailerons**
control surfaces
. ailerons
. . **spoiler slot ailerons**
RT spoilers

spoilers
DEF Plates, series of plates, combs, tubes, bars, or other devices that project into the airstream about bodies to break up or spoil the smoothness of the flow, especially such devices that project from the upper surface of an airfoil, giving increased drag and decreased lift.
GS airfoils
. **spoilers**
control surfaces
. **spoilers**
drag devices
. **spoilers**
RT aerodynamic brakes
boundary layer control
deflectors
flaps (control surfaces)
gust alleviators
leading edge slats
spoiler slot ailerons
vortex alleviation
wings

spokes
RT hubs
wheels

sponges (materials)
SN (ORGANIC OPEN-CELL STRUCTURES)
RT **elastomers**
∞ materials
polyurethane foam
porous materials

spontaneous combustion
UF *autoignition*
self ignition
GS combustion
. **spontaneous combustion**
RT combustion temperature
explosions
fire point
fire prevention
flammability
flash point
fuel combustion
hazards
hypergolic rocket propellants
ignition
ignition temperature
propellant sensitivity
pyrophoric materials

spontaneous emission
GS emission
. **spontaneous emission**
RT atomic energy levels
electromagnetic radiation
emission spectra
spectral emission

spools
RT ∞ containers
inserts
magazines (supply chambers)
reels
spindles

sporadic E layer
GS Earth atmosphere
. upper atmosphere
. . Earth ionosphere
. . . E region
. . . . **sporadic E layer**
regions
. E region
. . **sporadic E layer**
RT E-1 layer
E-2 layer
midlatitude atmosphere

sporadic meteoroids
SN (METEOROIDS NOT ASSOCIATED WITH A METEOROID SHOWER OR STREAM)
GS celestial bodies
. meteoroids
. . **sporadic meteoroids**
RT meteor trails
meteoroid concentration

spores
DEF The reproductive elements of the lower forms of living organisms, usually unicellular.
GS **spores**
. microspores
RT fungi
microorganisms
plants (botany)
protozoa
tetrad theory

sports medicine
GS medical science
. **sports medicine**
RT aerospace medicine
athletes
clinical medicine
exercise physiology
physical fitness
physiological effects

SPOT (French satellite)
DEF French **satellite** with high visible resolution for observations of the Earth. It was launched in February 1986. The acronym is derived from the French, Satellite Pour Observation de le Terre.
GS **artificial satellites**
. French satellites
. . **SPOT (French satellite)**
RT crop identification
Earth observations (from space)
Earth resources
land use
mapping
soil mapping
stereophotography

spot welds
GS joints (junctions)
. metal joints
. . welded joints
. . . **spot welds**
RT arc welding
beads
electric welding
fusion welding
pressure welding
ultrasonic welding

spray characteristics
RT ∞ characteristics
sprayers
spraying

spray condensers
RT jet condensers
sprayers

spray ingestion
RT gas turbines
landing gear
salt spray tests

spray nozzles
RT annular nozzles
conical nozzles
fuel injection
fuel systems
injectors
∞ nozzles
orifices
sprayers

sprayed coatings
UF *sprayed protective coatings*
GS coatings
. **sprayed coatings**
RT ceramic coatings
finishes
lacquers
metal coatings
paints
plasma spraying
plastic coatings
primers (coatings)
protective coatings
varnishes

sprayed protective coatings
USE **protective coatings**
sprayed coatings

sprayers
UF *spraying apparatus*
sprays
RT atomizers
blowers
colloidal generators
contactors
∞ containers
∞ diffusers
dispensers
distributors
drops (liquids)
ejectors
fuel sprays
∞ jets
materials handling
mixers
∞ nozzles
propellant sprays
spray characteristics
spray condensers
spray nozzles
spraying
vaporizers

spraying
GS **spraying**
. arc spraying
. crop dusting
. flame spraying
. metal spraying
. plasma spraying
RT aeration
aerosols
atomizing
blowing
coating
coatings
diffusion
dispersing
entrainment
forming techniques
fumigation
liquid atomization
metallizing
mixing
premixing
sealing
spray characteristics
sprayers
sprinkling
vaporizing
wetting

spraying apparatus
USE **sprayers**

sprays
USE **sprayers**

spread F
RT F 2 region
ionospheric storms
magnetic storms

spread reflection
DEF Reflection of electromagnetic radiation from a rough surface with large irregularities. Also known as mixed reflection.
GS reflection
. **spread reflection**
RT glare
infrared reflection
optical reflection
scattering
signal reflection
ultraviolet reflection
wave reflection

spread spectrum transmission
DEF Communications technique with many different signal waveforms transmitted in a wide band; power is spread thinly over the band so that narrow-band radios can operate within the band without interference.
GS transmission
. electromagnetic wave transmission
. . radio transmission
. . . **spread spectrum transmission**
. signal transmission
. . radio transmission
. . . **spread spectrum transmission**
RT communication
frequency hopping

spreading
RT adhesion
cohesion
diffusion
dispersing
disposal
dumping
emptying
interfacial tension
internal pressure
materials handling
scattering
∞ separation
spilling
swelling
throwing
unloading

spring (season)
DEF The season of the year between winter and summer. Its beginning is the vernal equinox and its end the summer solstice.
GS seasons
. **spring (season)**
RT autumn
summer
winter

springs (elastic)
RT ∞ coils
energy storage
frames
oscillation dampers
oscillations
resilience
shock absorbers
suspension systems (vehicles)
vibration isolators

springs (water)
DEF Places where ground water flows naturally from rocks onto the land surface or into a body of surface water. Their occurrence depends on the nature and relationship of rocks, especially permeable and impermeable strata, on the position of the water table, and on the topography.
GS resources
. Earth resources
. . **springs (water)**
water
. **springs (water)**
RT aquifers
fresh water
ground water
inland waters
lakes
oases
potable water
water tables
wells

sprinkling
RT scattering
spraying
wetting

Sprint missile
GS missiles
. antimissile missiles
. . **Sprint missile**
. surface to air missiles
. . **Sprint missile**
RT Nike-Zeus missile
Sentinel system
solid propellant rocket engines
Spartan missile

SPUR (reactors)
USE **space power unit reactors**

SPURT (trajectories)
USE **spinning unguided rocket trajectory**

Sputnik 1 satellite
GS artificial satellites
. meteorological satellites
. . **Sputnik 1 satellite**
. Soviet satellites
. . Sputnik satellites
. . . **Sputnik 1 satellite**
Soviet spacecraft
. Sputnik satellites
. . **Sputnik 1 satellite**

Sputnik 2 satellite
GS artificial satellites
. biosatellites
. . **Sputnik 2 satellite**
. meteorological satellites
. . **Sputnik 2 satellite**
. Soviet satellites
. . Sputnik satellites
. . . **Sputnik 2 satellite**
Soviet spacecraft
. Sputnik satellites
. . **Sputnik 2 satellite**

Sputnik 3 satellite
GS artificial satellites
. geophysical satellites
. . **Sputnik 3 satellite**
. meteorological satellites
. . **Sputnik 3 satellite**
. Soviet satellites
. . Sputnik satellites
. . . **Sputnik 3 satellite**
Soviet spacecraft
. Sputnik satellites
. . **Sputnik 3 satellite**

Sputnik 4 satellite
GS artificial satellites
. Soviet satellites
. . Sputnik satellites
. . . **Sputnik 4 satellite**
Soviet spacecraft
. Sputnik satellites
. . **Sputnik 4 satellite**

Sputnik 5 satellite
GS artificial satellites
. Soviet satellites
. . Sputnik satellites
. . . **Sputnik 5 satellite**
Soviet spacecraft
. Sputnik satellites
. . **Sputnik 5 satellite**
RT Venus probes

Sputnik satellites
GS artificial satellites
. Soviet satellites
. . **Sputnik satellites**
. . . Sputnik 1 satellite
. . . Sputnik 2 satellite
. . . Sputnik 3 satellite
. . . Sputnik 4 satellite
. . . Sputnik 5 satellite
Soviet spacecraft
. **Sputnik satellites**
. . Sputnik 1 satellite
. . Sputnik 2 satellite
. . Sputnik 3 satellite
. . Sputnik 4 satellite
. . Sputnik 5 satellite

sputtering
DEF Dislocation of surface atoms of a material from bombardment of high energy atomic particles.
GS **sputtering**
. magnetron sputtering
RT arc welding
∞ bombardment
deposition
duoplasmatrons
electron bombardment
emission
ion plating
ion sources
metal particles
plasma etching
surface finishing
thermal instability

sputtering gages
GS measuring instruments
. **sputtering gages**
RT metal films
thin films

squalls
GS wind (meteorology)
. **squalls**
RT ground wind
storms (meteorology)

squama
DEF A scale or structure resembling a scale.
RT fishes

square waves
DEF Oscillations, the amplitudes of which show periodic discontinuities between two values, remaining constant between jumps. Specifically, in radar pulses initiated by a rapid rise to peak power, maintained at a constant peak power over the finite pulse length, and terminated by rapid decrease from peak power.
GS waveforms
. **square waves**
RT form factors
pulse amplitude
pulse duration
sawtooth waveforms
time functions
wave functions
wave propagation
∞ waves

square wells
DEF The impurity potential areas which bound an electron or hole in semiconducting crystals such as silicon.
RT electron mobility
magnetic fields
photoconductivity
vacancies (crystal defects)
wells

squares (mathematics)
GS geometry
. Euclidean geometry
. . polygons
. . . tetragons
. . . . **squares (mathematics)**

squeeze casting
(added September 1993)
DEF The technique of working liquid metals under pressure into near net shapes; it includes the technique of forging metal compounds.
GS forming techniques
. casting
. . **squeeze casting**
RT cast alloys
compressing
extruding
fabrication
forging
liquid metals
metal matrix composites
metal working

squeeze films
DEF Thin viscoelastic fluid films squeezed between two usually planar structures to serve as sealants, load dampers, lubricants, etc.
GS fluid films
. **squeeze films**
RT boundary lubrication
elastohydrodynamics
∞ films
gas bearings
gas lubricants
liquid-solid interfaces
lubricants
thin films
vapor phase lubrication
viscoelasticity
viscous fluids

squeezed states (quantum theory)
DEF Single mode minimum uncertainty states for which the fluctuations in one quadrature phase of the field are smaller than would occur for a coherent state. Used for two photon coherent states.
UF *two photon coherent states*
RT coherent electromagnetic radiation
coherent light
electromagnetic fields
fluctuation theory
light transmission
∞ optics
photon density
quantum mechanics
quantum theory

squeezing
USE **compressing**

squelch circuits
GS circuits
. **squelch circuits**
RT background noise
electromagnetic noise
noise reduction
silencers
suppressors
switching circuits

squibs
DEF Various small explosive devices. Explosive devices used in the ignition of a rocket. Used for XM-6 squib and XM-8 squib.
UF *XM-6 squib*
XM-8 squib
GS igniters
. **squibs**
RT electric ignition

ignition systems
primers (explosives)
solid propellant ignition
starters

squid (detectors)
DEF Superconducting quantum interference device magnetometers. Used for superconducting quantum interferometers.
UF *superconducting quantum interferometers*
GS superconducting devices
. **squid (detectors)**
RT ∞ detectors
Josephson junctions
magnetic measurement
quantum counters
SIS (superconductors)
superconductors (materials)

SQUID project
GS programs
. projects
. . **SQUID project**
RT jet propulsion

squirrels
GS animals
. vertebrates
. . mammals
. . . rodents
. . . . **squirrels**
. . . . . ground squirrels

SR (reactors)
USE **saturable reactors**

SR-71 aircraft
(added March 1990)
UF *Blackbird aircraft*
GS Lockheed aircraft
. **SR-71 aircraft**
reconnaissance aircraft
. **SR-71 aircraft**
supersonic aircraft
. **SR-71 aircraft**
RT ∞ aircraft
∞ military aircraft

SR-N2 ground effect machine
USE **Westland ground effect machines**

SR-N3 ground effect machine
USE **Westland ground effect machines**

SR-N5 ground effect machine
USE **Westland ground effect machines**

SRB (Solid Rocket Boosters)
USE **Space Shuttle Boosters**

SRE reactor
USE **sodium reactor experiment**

SRET 1 satellite
GS artificial satellites
. French satellites
. . SRET satellites
. . . **SRET 1 satellite**
. meteorological satellites
. . SRET satellites
. . . **SRET 1 satellite**
RT French space program

SRET 2 satellite
GS artificial satellites
. French satellites
. . SRET satellites
. . . **SRET 2 satellite**
. meteorological satellites
. . SRET satellites
. . . **SRET 2 satellite**

SRET satellites
GS artificial satellites
. French satellites
. . **SRET satellites**
. . . SRET 1 satellite
. . . SRET 2 satellite
. meteorological satellites
. . **SRET satellites**
. . . SRET 1 satellite
. . . SRET 2 satellite
RT French space program

Sri Lanka
UF *Ceylon*
GS nations
. **Sri Lanka**
RT Asia

SS-11 missile
GS missiles
. **SS-11 missile**
RT multistage rocket vehicles
solid propellant rocket engines

SSGS (standardized space guidance)
USE **standardized space guidance**

SSTI
USE **small satellite technology**

SSUS-A
USE **Space Shuttle upper stage A**

SSUS-D
USE **Space Shuttle upper stage D**

St Lawrence Valley (North America)
GS landforms
. **St Lawrence Valley (North America)**
valleys
. **St Lawrence Valley (North America)**
RT Canada
Maine
New Hampshire
New York
Vermont

St Louis-Kansas City Corridor (MO)
GS corridors
. **St Louis-Kansas City Corridor (MO)**
RT Missouri
regional planning

St Venant flexure problem
USE **Saint Venant principle**

stability
DEF The property of a body, as an aircraft or rocket, to maintain its **attitude** or to resist displacement, and, if displaced to develop forces and moments tending to restore the original condition. Of a fuel, the capability of a fuel to retain its characteristics in an adverse environment, e.g. extreme temperature. Used for instability.
UF *instability*
GS **stability**
. acoustic instability
. baroclinic instability
. dynamic stability
. . combustion stability
. . . **flame stability**
. . control stability
. . frequency stability
. . motion stability
. . . aerodynamic stability
. . . aircraft stability
. . . . hovering stability
. . . **attitude stability**
. . . . directional stability
. . . . . gyroscopic stability
. . . . lateral stability
. . . . longitudinal stability
. . . flow stability
. . . . boundary layer stability
. . . . flame stability
. . . . magnetohydrodynamic stability
. . . . . Weibel instability
. . . low speed stability
. . . rotary stability
. . . . gyroscopic stability
. . . spacecraft stability
. gravitational instability
. Goertler instability
. interface stability
. laser stability
. magnetospheric instability
. numerical stability
. phase stability (materials)
. static stability
. . dimensional stability
. . . structural stability
. . . . shell stability
. storage stability
. surface stability
. systems stability
. thermal stability
RT amplification
ballast (mass)
chemical compatibility
compatibility
controllability
∞ drift
drift rate
durability
dynamic characteristics
equations of motion
∞ equilibrium
metastable state
quality
reliability
∞ resistance
safety factors
spacecraft motion
stabilizers (agents)
steady state
tolerances (mechanics)
Tresca flow
unity
unsteady state
variability
Vlasov equations
vulnerability

stability augmentation
DEF Maintenance of aircraft stability in flight by means of automatic control devices which supplement a pilot's manipulation of the aircraft controls. The automatic controls are used to modify inherent aircraft handling problems.
GS augmentation
. **stability augmentation**
RT aerodynamic stability
aircraft control
attitude (inclination)
automatic control
control stability
directional stability
feedback control
flight control
lateral oscillation
pitch (inclination)

stability derivatives
UF *aerodynamic moments*
GS moments
. **stability derivatives**
. . pitching moments
. . rolling moments
. . yawing moments
RT complex variables
damping
differential equations
moments of inertia
real variables
vector analysis

stability tests
GS **stability tests**
. flight stability tests
. wind tunnel stability tests
RT corrosion tests
damping tests
electronic equipment tests
flight tests
fuel tests
ground tests
missile tests
propellant tests
resonance testing
∞ tests
vibration tests

stabilization
UF *missile stabilization*
GS **stabilization**
. signal stabilization
. spin stabilization
. three axis stabilization
RT acid base equilibrium
balancing
consolidation
∞ control
∞ equilibrium
heat treatment
horizontal orientation
laser gyroscopes
phase stability (materials)
stabilizers (agents)
stress relieving
vertical orientation

stabilized platforms
RT gimbals
gyroscopic stability
gyrostabilizers
inertial guidance
∞ platforms
three axis stabilization

∞ **stabilizers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT gyroscopes
sea keeping
stabilizers (agents)
stabilizers (fluid dynamics)

stabilizers (agents)
RT additives
∞ agents
anticoagulants
antioxidants
neutralizers
preservatives
retardants
stability
stabilization
∞ stabilizers

stabilizers (fluid dynamics)
UF *horizontal stabilizers*
vertical stabilizers
vertical tails
GS **stabilizers (fluid dynamics)**
. horizontal tail surfaces
RT aerial rudders
airfoils
control surfaces
∞ dynamics
elevators (control surfaces)
fins
keels
rudders
∞ stabilizers
sweptback tail surfaces
T tail surfaces
tabs (control surfaces)
tail assemblies
tail surfaces
trapezoidal tail surfaces

stable oscillations
GS oscillations
. **stable oscillations**
RT dynamic stability
frequency pulling
frequency stability
gyroscopic stability
motion stability
nonstabilized oscillation
pilot induced oscillation
resonant vibration
transverse oscillation
undamped oscillations
wing oscillations

stacking fault energy
RT crystal defects
∞ energy
twinning

stacking faults
USE **crystal defects**

stacking sequence (composite materials)
(added June 1997)
RT composite materials
fiber composites
fiber orientation
laminates
lay-up
ply orientation

stacks
RT chimneys
crystal defects
materials handling

STADAN (satellite tracking network)
USE **STDN (network)**

stadimeters
DEF Instruments for determining the distance to an object of known dimension by measuring the angle subtended at the observer by the object. The instrument is graduated directly in distance.
GS measuring instruments
. distance measuring equipment
. . **stadimeters**
RT range finders
sextants

stage separation
UF *staging (rockets)*
RT booster rocket engines
expendable stages (spacecraft)
interim stages (spacecraft)
Lunar Module Ascent Stage
missiles
multistage rocket vehicles
propellant mass ratio
rocket vehicles
∞ separation
Space Shuttle Ascent Stage
sustainer rocket engines
thrust termination
upper stage rocket engines

staggering
RT ∞ configurations
disorientation

staging (rockets)
USE **stage separation**

stagnation flow
GS fluid flow
. inviscid flow
. . **stagnation flow**
RT boundary layer flow
boundary layer separation
compressible flow
stagnation point

stagnation point
DEF Point in a field of flow about a body where the fluid particles have zero velocity with respect to the body. Used for stagnation region.
UF *stagnation region*
RT blunt bodies
boundary layer flow
flow distribution
fluid dynamics
heat transfer
stagnation flow

stagnation pressure
GS pressure
. **stagnation pressure**
RT compressible flow
inlet pressure

stagnation region
USE **stagnation point**

stagnation temperature
GS temperature
. **stagnation temperature**
RT adiabatic flow
compressible flow
inviscid flow

staining
RT chemical tests
discoloration
marking
methylene
methylene blue

stainless steels
GS alloys
. iron alloys
. . steels
. . . **stainless steels**
. . . . austenitic stainless steels
. . . . ferritic stainless steels
. . . . martensitic stainless steels
RT chromium alloys
maraging steels
molybdenum alloys
nickel alloys
nickel steels

staircases
USE **stairways**

stairsteps
RT backward facing steps

formations
∞ **steps**
topography

stairways
UF *staircases*
RT buildings
escalators
ladders
treads

∞ **stalling**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT **aerodynamic stalling**
boundary layer separation
engine failure
rotating stalls

stamping
SN (EXCLUDES IDENTIFICATION MARKING)
GS forming techniques
. pressing (forming)
. . **stamping**
RT ∞ blanking
blanking (cutting)
coining
cold working
dies
dimpling
forging
hot isostatic pressing
hot pressing
metal working
punches
shearing
swaging
upsetting

standard atmospheres
USE **reference atmospheres**

standard deviation
DEF A measure of the agreement between test results.
GS moments
. distribution moments
. . **standard deviation**
statistical analysis
. **standard deviation**
RT confidence limits
estimating
heterogeneity
quality control
range (extremes)
variability
variance (statistics)

standard electroweak model
USE **electroweak model**

standard launch vehicle 3
USE **Atlas SLV-3 launch vehicle**

Standard Launch Vehicle 5
GS launch vehicles
. Standard Launch Vehicles
. . **Standard Launch Vehicle 5**
rocket vehicles
. Standard Launch Vehicles
. . **Standard Launch Vehicle 5**

Standard Launch Vehicles
UF *SLV*
GS launch vehicles
. **Standard Launch Vehicles**
. . Atlas SLV-3 launch vehicle
. . Standard Launch Vehicle 5
rocket vehicles
. **Standard Launch Vehicles**
. . Atlas SLV-3 launch vehicle
. . Standard Launch Vehicle 5
RT Atlas D ICBM
∞ vehicles

standard model (particle physics)
(added April 1994)
GS field theory (physics)
. gauge theory
. . unified field theory
. . . **standard model (particle physics)**
models
. **standard model (particle physics)**
RT bosons
electroweak interactions (field theory)
electroweak model
elementary particles
particle theory
quantum chromodynamics
quantum theory
quark models
strong interactions (field theory)
weak interactions (field theory)

standardization
DEF The act or process of reducing something to, or comparing it with, a standard. A measure of uniformity. A special case of calibration whereby a known input is applied to a device or system for the purpose of verifying the output of adjusting the output to a desired level or scale factor.
GS **standardization**
. commonality
RT calibrating
metrication
naming
numerical control
product development
production engineering
quality control
specifications
standards
variability

standardized space guidance
UF *SSGS (standardized space guidance)*
GS guidance (motion)
. **standardized space guidance**
RT space navigation

standards
DEF References used as a basis for comparison or calibration. Concepts that have been established by authority, custom, or agreement to serve as models or rules in the measurement of quantity of the establishment of a practice or a procedure. Used for references (standards).
UF *references (standards)*
GS **standards**
. frequency standards
. reference atmospheres
RT acceptability
accuracy
calibrating
∞ codes
conventions
criteria
document markup languages
inspection
∞ measurement
∞ measures
metrology
∞ performance
performance tests
quality control
reliability
sampling
specifications
standardization
temperature scales
tolerances (mechanics)
validity
value engineering

standing wave ratios
GS ratios
. **standing wave ratios**
RT amplitudes
electrical properties
Smith chart
transmission lines

standing waves
DEF Periodic waves having fixed distribution in space which are the result of interference of progressive waves of the same frequency and kind. Such waves are characterized by the existence of nodes or partial nodes and antinodes that are fixed in space.
RT amplitudes
beat frequencies
• frequencies
harmonics
nodes (standing waves)
∞ radiation
resonant frequencies
vibration
wavelengths
∞ waves

stands
USE **supports**

stannates
GS tin compounds
. **stannates**
RT ∞ oxygen compounds

stannides
GS tin compounds
. **stannides**
. . niobium stannides
RT tin alloys

Stanton number
GS dimensionless numbers
. **Stanton number**
ratios
. **Stanton number**
RT forced convection
heat transfer

staphylococcus
GS microorganisms
. bacteria
. . **staphylococcus**
RT pleurotin

star catalogs
USE **astronomical catalogs**

star clusters
DEF Groups of stars physically close together.
GS celestial bodies
. **star clusters**
. . globular clusters
. . open clusters
. . . Pleiades cluster
. . . Praesepe star clusters
RT barred galaxies

binary stars
∞ clusters
color–magnitude diagram
disk galaxies
elliptical galaxies
galactic clusters
galaxies
irregular galaxies
Magellanic clouds
metallicity
solar neighborhood
stars
stellar systems
Virgo galactic cluster

star distribution
UF *star fields*
stellar fields
GS distribution (property)
. spatial distribution
. . vertical distribution
. . . **star distribution**
RT angular distribution
astrolabes
barred galaxies
cosmology
galactic clusters
galactic evolution
galactic halos
globular clusters
mass distribution
radial distribution
star formation
stellar systems
Virgo galactic cluster

star fields
USE **star distribution**

star formation
DEF The collapse under gravity of molecular clouds of interstellar matter to form clusters of protostars, and the continuing collapse of the protostars to form main-sequence stars.
GS evolution (development)
. stellar evolution
. . **star formation**
RT astrophysics
cooling flows (astrophysics)
cosmology
early stars
hydrogen clouds
interstellar gas
interstellar matter
molecular clouds
nebulae
nuclear fusion
pre-main sequence stars
protostars
star distribution
star formation rate
starburst galaxies
stars
stellar mass accretion
T Tauri stars

star formation rate
DEF The rate at which stars are formed within a specified region or galaxy; sometimes expressed as the number of solar masses per year.
GS rates (per time)
. **star formation rate**
RT galactic evolution
galaxies
star formation
starburst galaxies
stellar evolution

star trackers
DEF Telescopic instruments on rockets or other flight borne vehicles that lock onto a celestial body and give guidance reference to the vehicles during flight. Used for star tracking.
UF *star tracking*
GS tracking (position)
. **star trackers**
. . CCD star tracker
RT Astroguide Navigation System
astrolabes
attitude control
celestial navigation
charge injection devices
flight instruments
guidance sensors
inertial navigation
laser guide stars
missile control
navigation
navigation aids
navigation instruments
solar sensors
spacecraft guidance

star tracking
USE **star trackers**

starburst galaxies
GS celestial bodies
. galaxies
. . **starburst galaxies**
RT galactic nuclei
star formation
star formation rate

starches
GS organic compounds
. carbohydrates
. . polysaccharides
. . . **starches**
RT chitin
∞ food
sizing materials

Starfighter aircraft
USE **F-104 aircraft**

Stark effect
DEF The broadening or splitting of a spectral line observed when a luminous gas is acted upon by a strong electric field.
RT ∞ effects
electric fields
electro-optics
hydrogen plasma
line spectra
resolution
spectrum analysis
Zeeman effect

Starlab
DEF A proposed satellite ultraviolet telescope that was a joint project between the United States, Canada, and Australia. It is currently in abeyance. Used for Spacelab UV-Optical Telescope Facility.
UF *Spacelab UV-Optical Telescope Facility*
GS telescopes
. spaceborne telescopes
. . **Starlab**
. ultraviolet telescopes
. . **Starlab**
RT ∞ optics
Space Shuttle payloads
Spacelab

Starlifter aircraft
USE **C-141 aircraft**

Starprobe mission
GS programs
. NASA programs
. . NASA space programs
. . . **Starprobe mission**
. space programs
. . NASA space programs
. . . **Starprobe mission**
space missions
. **Starprobe mission**
RT Starprobe spacecraft

Starprobe spacecraft
GS unmanned spacecraft
. space probes
. . solar probes
. . . **Starprobe spacecraft**
RT Starprobe mission

starquakes
(added July 1989)
RT gamma ray bursts
neutron stars
pulsars
stars
stellar activity
stellar physics
stellar rotation
stellar structure

stars
DEF Self-luminous celestial bodies exclusive of nebulas, comets, and meteors; suns seen in the heavens. Distinguished from planets or natural satellites that shine by reflected light.
GS celestial bodies
. **stars**
. . black holes (astronomy)
. . brown dwarf stars
. . double stars
. . . binary stars
. . . . cataclysmic variables
. . . . companion stars
. . . . . Nemesis (star)
. . . . eclipsing binary stars
. . . . . dwarf novae
. . . . . Lambda Tauri stars
. . . . . Zeta Aurigae star
. . . . Sigma Orionis
. . . . symbiotic stars
. . . . x ray binaries
. . early stars
. . hot stars
. . . A stars
. . . B stars
. . . . shell stars
. . . . Sigma Orionis
. . . blue stars
. . . O stars
. . . white dwarf stars
. . . Wolf-Rayet stars
. . F stars
. . G stars
. . sun
. giant stars
. . asymptotic giant branch stars
. . Omicron Ceti star
. . red giant stars
. . . carbon stars
. horizontal branch stars
. infrared stars
. late stars
. . cool stars
. . . carbon stars
. . . flare stars
. . . K stars
. . . M stars

. . . . . Van Biesbroeck star
. . . . Mira variables
. . . . . Omicron Ceti star
. . . . S **stars**
. . **magnetic stars**
. . main **sequence stars**
. . . dwarf **stars**
. . . . dwarf novae
. . . . flare stars
. . . . red dwarf stars
. . . sun
. . massive **stars**
. . **metallic stars**
. . neutron **stars**
. . . pulsars
. . peculiar **stars**
. . . shell **stars**
. . . Sigma Orionis
. . . symbiotic **stars**
. . Praesepe star clusters
. . protostars
. . . pre–main sequence stars
. . . . T Tauri stars
. . radio stars
. . . pulsars
. . reference **stars**
. . subdwarf **stars**
. . subgiant **stars**
. . supergiant **stars**
. . . R Coronae Borealis stars
. . supermassive **stars**
. . triple **stars**
. . variable **stars**
. . . cataclysmic variables
. . . cepheid variables
. . . flare **stars**
. . . irregular variable stars
. . . . R Coronae Borealis stars
. . . Lambda Tauri stars
. . . Mira variables
. . . . Omicron Ceti star
. . . novae
. . . . dwarf novae
. . . . Hercules nova
. . . semiregular variable stars
. . . supernovae
. . . . supernova 1987A
. . . symbiotic **stars**
. . . T Tauri **stars**
. . white holes (astronomy)
. . x ray stars
. . . x ray binaries
RT Aries constellation
astrolabes
barred galaxies
Cassiopeia constellation
celestial mechanics
Centaurus constellation
constellations
Corona Borealis constellation
Cygnus constellation
faint objects
galaxies
irregular galaxies
Lyra constellation
Magellanic clouds
metallicity
Milky Way Galaxy
quasars
solar neighborhood
star clusters
star formation
starquakes
starspots
stellar activity
stellar composition
stellar cores
stellar gravitation
stellar interiors
stellar magnitude
stellar oscillations
Virgo galactic cluster

stars (mathematics)
RT ∞ mathematics

Starsat telescope
DEF An anastigmatic 3–mirror reflecting telescope for ultraviolet astronomy purposes aboard the Starsat satellite.
GS telescopes
. reflecting telescopes
. . **Starsat telescope**
. spaceborne telescopes
. . **Starsat telescope**
RT coronagraphs
spaceborne astronomy
spectroheliographs
ultraviolet astronomy

Starsite program
GS programs
. **Starsite program**
RT architecture
buildings
communities
conferences
construction
decision making
∞ development
environmental engineering
information retrieval
land use
management methods
NASA programs
planning
recreation
shelters
social factors
technology transfer
urban development
urban planning

starspots
DEF Temporary disturbed areas in the stellar photosphere that appear dark because they are colder than the surrounding areas.
GS stellar activity
. **starspots**
. . sunspots
RT faculae
magnetic disturbances
photosphere
solar activity
stars
stellar atmospheres
stellar luminosity
stellar magnetic fields
stellar radiation
sunspot cycle
twenty-seven day variation

starters
GS **starters**
. engine starters
RT actuators
ignition systems
squibs
starting

starting
GS **starting**
. air start
RT activation
actuation
cycles
electric ignition
engine primers
excitation
firing (igniting)
ignition
initiation
launching
∞ priming
reactor startup tests
starters
stimulation

state equations
USE **equations of state**

state estimation
RT algorithms
Kalman filters
linear systems
orbital position estimation
state vectors
stochastic processes

state vectors
GS algebra
. vector spaces
. . vectors (mathematics)
. . . **state vectors**
RT observability (systems)
phase–space integral
state estimation
steady state
strange attractors

static aerodynamic characteristics
GS aerodynamic characteristics
. **static aerodynamic characteristics**
static characteristics
. **static aerodynamic characteristics**
RT aerodynamic balance
aerodynamic stability
∞ characteristics

static alternators
GS electric generators
. AC generators
. . **static alternators**

static characteristics
SN (EXCLUDES STATICS)
GS **static characteristics**
. static aerodynamic characteristics
RT static loads
static stability
static tests

static deformation
GS deformation
. **static deformation**
RT creep properties
Maxwell–Mohr method
Saint Venant principle

static dischargers
UF *antistatic devices*
GS dischargers
. **static dischargers**

static electricity
GS electricity
. **static electricity**
RT atmospheric electricity
atmospherics
electric corona
electric fields
electric potential
electric sparks

electrostatic charge
electrostatics
lightning
open circuit voltage
space charge

static firing
DEF The firing of a rocket engine in a hold down position to measure thrust and accomplish other tests.
GS captive tests
. static tests
. . **static firing**
engine tests
. **static firing**
firing (igniting)
. test firing
. . **static firing**
ground tests
. prelaunch tests
. . **static firing**
RT rocket firing

static friction
GS friction
. **static friction**
RT coefficient of friction
dry friction
friction measurement
kinetic friction
sliding
sliding friction

static inverters
GS inverters
. **static inverters**
RT electric generators

static loads
UF *deadweight*
GS loads (forces)
. **static loads**
RT aerodynamic loads
axial compression loads
axial loads
ballast (mass)
bending moments
compression loads
critical loading
dynamic loads
edge loading
flexural strength
loading moments
mass distribution
moment distribution
pressure distribution
random loads
Saint Venant principle
static characteristics
structural design criteria
transverse loads
wing loading

static models
DEF Sets of equations of physical laws to determine a balance of systems at rest.
GS models
. **static models**
RT approximation
dynamic models
optimization

static pressure
GS pressure
. **static pressure**
. . hydrostatic pressure
RT isostatic pressure
pitot tubes
sound pressure

static stability
GS stability
. **static stability**
. . dimensional stability
. . . structural stability
. . . . shell stability
RT aircraft stability
counterbalances
drift (instrumentation)
dynamic stability
magnetohydrostatics
static characteristics
storage stability
stratification
surface stability

static tests
SN (ENCOMPASSES MATERIALS, ENGINE, AND VEHICLE TESTS)
GS captive tests
. **static tests**
. . static firing
RT cold flow tests
compression tests
creep tests
dynamic tests
engine tests
fatigue tests
ground tests
hardness tests
inspection
load tests
∞ materials tests
missile tests
nondestructive tests
prefiring tests
prelaunch tests
quality control
resonance testing
static characteristics
tensile tests
test firing
∞ tests
vibration tests
wear tests

static thrust
GS thrust
. **static thrust**
RT jet thrust
rocket thrust

statics
GS **statics**
. aerostatics
. electrostatics
. hydrostatics
. . magnetohydrostatics
RT ∞ dynamics
elastostatics
∞ equilibrium
fluid mechanics
∞ mechanics (physics)

stationary orbits
DEF Orbits in which the satellite revolves about the primary at the angular rate at which the primary rotates on its axis. From the primary, the satellite thus appears to be stationary over a point on the primary.
GS orbits
. circular orbits
. . **stationary orbits**
. equatorial orbits
. . **stationary orbits**
. spacecraft orbits
. . satellite orbits
. . . **stationary orbits**
RT Earth orbits
geosynchronous orbits
. synchronous satellites
twenty-four hour orbits

stationkeeping
DEF The sequence of maneuvers that maintains a vehicle in predetermined orbit.
GS positioning
. **stationkeeping**
RT guidance (motion)
navigation
orbital mechanics
orbits
payload retrieval (STS)
satellite constellations
spacecraft control

stations
GS **stations**
. ground stations
. . Deep Space Instrumentation Facility
. . Earth terminals
. . integrated mission control center
. . polystation doppler tracking system
. hydroelectric power stations
. payload stations
. space stations
. . Automatic Universal Orbiting Stations
. . Columbus space station
. . Halo Orbit space station
. . International Space Station
. . man tended free flyers
. . Mir space station
. . . Kvant modules
. . . Priroda module
. . orbiting lunar stations
. . Salyut space station
. . Skylab 1
. . Skylab 2
. . Skylab 3
. . Skylab 4
. . Space Operations Center (NASA)
. . Space Station Freedom
. . space station polar platforms
. tracking stations
. . Deep Space Instrumentation Facility
. . Global Tracking Network
. . polystation doppler tracking system
. weather stations
. . automatic weather stations
. workstations
. . crew workstations
. . . crew experiment stations
. . . crew observation stations
RT ∞ bases
∞ facilities
lunar bases
military air facilities
planetary bases
position (location)
space bases
Space Flight Tracking and Data Network

statistical analysis
GS **statistical analysis**
. amplitude distribution analysis
. correlation coefficients
. discriminant analysis (statistics)
. factor analysis
. goodness of fit
. likelihood ratio
. Maxwell-Boltzmann density function

. nonparametric statistics
. Poisson density functions
. probability density functions
. . normal density functions
. . Pearson distributions
. . Rayleigh distribution
. . Weibull density functions
. probability distribution functions
. quantiles
. sequential analysis
. standard deviation
. statistical correlation
. statistical decision theory
. statistical tests
. . Kolmogorov–Smirnov test
. . Mann–Whitney–Wilcoxon U test
. . rank tests
. variance (statistics)
. . analysis of variance
. . multivariate statistical analysis
. . . bivariate analysis
. . . covariance
. . . orthogonality
. . . regression analysis
. . . . regression coefficients
RT ∞ analyzing
∞ applications of mathematics
approximation
autoregressive processes
binomial theorem
biometrics
censored data (mathematics)
charts
Chebyshev approximation
cluster analysis
coefficients
confidence
confidence limits
continuity (mathematics)
correlation
∞ data
data correlation
decision theory
discrete functions
∞ dispersion
economics
estimates
estimating
events
expectancy hypothesis
experiment design
exponential functions
extrapolation
factorial design
failure analysis
forecasting
game theory
Gauss–Markov theorem
graphs (charts)
information theory
inspection
interpolation
linear prediction
management
∞ mathematics
maximum entropy method
mean
median (statistics)
Mills ratio
minimum variance orbit determination
Monte Carlo method
MTBF
operations research
outliers (statistics)
parameter identification
probability theory
quality control
quartiles
queueing theory
random processes
reliability
root–mean–square errors
sampling
∞ statistics
stochastic processes
system identification
systems analysis
– systems engineering
tables (data)
teleconnections (meteorology)
traveling salesman problem
trend analysis
Wiener filtering
Yang–Mills theory

statistical communication theory
USE **communication theory**

statistical correlation
GS correlation
. **statistical correlation**
statistical analysis
. **statistical correlation**
RT correlation coefficients
data correlation
econometrics
evaluation
quality control
∞ statistics
teleconnections (meteorology)

statistical decision theory
GS decision theory
. **statistical decision theory**
statistical analysis
. **statistical decision theory**
RT game theory
∞ theories

statistical distributions
UF *random distributions*
GS **statistical distributions**
. brightness distribution
. Pearson distributions
. probability distribution functions
. Rayleigh distribution
RT binomial theorem
censored data (mathematics)
complexity
curve fitting
∞ distribution
distribution (property)
distribution functions
distribution moments
error functions
events
expectancy hypothesis
forecasting
gamma function
goodness of fit
Kolmogorov–Smirnov test
kurtosis
mathematical models
outliers (statistics)
probability theory
quality control
quantiles
quantum theory
quartiles
reliability
scattering
size distribution

statistical mechanics
RT Boltzmann distribution
Boltzmann transport equation
classical mechanics
closure law
cluster variation method
continuum mechanics
energy distribution
fluctuation theory
function space
Ising model
Liouville equations
macroscopic equations
Malkus theory
many body problem
Maxwell–Boltzmann density function
∞ mechanics (physics)
molecular dynamics
Onsager phenomenological coefficient
quantum mechanics
quantum theory
renormalization group methods
thermodynamic equilibrium
weighting functions

statistical moments
USE **distribution moments**

statistical probability
USE **probability theory**

statistical tests
UF *Bruceton test*
GS statistical analysis
. **statistical tests**
. . Kolmogorov–Smirnov test
. . Mann–Whitney–Wilcoxon U test
. . rank tests
RT charts
confidence limits
curve fitting
∞ data
estimates
estimating
factor analysis
goodness of fit
heterogeneity
homogeneity
likelihood ratio
normality
null hypothesis
outliers (statistics)
quality control
range (extremes)
regression analysis
reliability
significance
∞ tests
validity

statistical weather forecasting
GS forecasting
. weather forecasting
. . **statistical weather forecasting**
meteorology
. weather forecasting
. . **statistical weather forecasting**
RT long range weather forecasting
numerical weather forecasting

∞ **statistics**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT arrays
biometrics
census
∞ data

demography
entropy (statistics)
estimates
estimating
Fermi–Dirac statistics
information theory
nonparametric statistics
populations
probability theory
quantiles
quantum statistics
random variables
reliability
sampling
statistical analysis
statistical correlation
stochastic processes
surveys
systems engineering
tables (data)
time series analysis

stator blades
GS turbomachine blades
. **stator blades**
RT ∞ blades
compressor blades
rotor blades (turbomachinery)
rotor stator interactions
stators
turbine blades
vanes

stators
DEF In machinery, parts or assemblies that remain stationary with respect to rotating or moving parts or assemblies such as the field frames of electric motors or generators, or the stationary casings and blades surrounding axial flow compressor rotors or turbine wheels; sator blades.
RT compressors
electric motors
∞ generators
impellers
motors
pumps
∞ rotating electrical machines
rotors
stator blades
turbines

statutes
USE **law (jurisprudence)**

stays
USE **guy wires**

STDN (network)
DEF Spaceflight Tracking and Data Network. Name changed from Space Tracking and Data Acquisition Network (STDAN). Used for Satellite Tracking and Data Acq Network, Spacecraft Tracking and Data Network, and STADAN (satellite tracking network).
UF *Satellite Tracking and Data Acq Network*
Spacecraft Tracking and Data Network
STADAN (satellite tracking network)
GS networks
. tracking networks
. . **STDN (network)**
RT data acquisition
Global Tracking Network
minitrack system
optical tracking
range and range rate tracking
satellite tracking
space detection and tracking system
Space Flight Tracking and Data Network
tracking stations

steady flow
GS fluid flow
. **steady flow**
. . Couette flow
. . Hartmann flow
RT Beltrami flow
continuity equation
critical flow
Crocco method
equilibrium flow
∞ flow
flow characteristics
flow geometry
flow stability
gas flow
heat transmission
hydrodynamic coefficients
laminar flow
liquid flow
low turbulence
mass flow
method of characteristics
multiphase flow
nonNewtonian flow
orifice flow
parallel flow
pipe flow
pressure gradients
quasi-steady states
single-phase flow
solids flow
steam flow
Stokes flow
subcritical flow
supercritical flow
turbulence
turbulent flow
two dimensional flow
uniform flow
unsteady flow

steady state
DEF The condition of a substance or system whose local physical and chemical properties do not vary with time.
RT ∞ equilibrium
fluid dynamics
metastable state
stability
state vectors
unsteady flow
unsteady state

steady state creep
GS mechanical properties
. creep properties
. . **steady state creep**
RT plastic flow
quasi-steady states

steady state flow
USE **equilibrium flow**

stealth bomber
USE **B-2 aircraft**

steam
RT boilers
fog
superheating
thermodynamics
water
water vapor

steam flow
GS fluid flow
. **steam flow**
RT critical flow
gas flow
laminar flow
mass flow
multiphase flow
orifice flow
pipe flow
pipelines
pressure gradients
single-phase flow
steady flow
subcritical flow
supercritical flow
turbulent flow
uniform flow
unsteady flow

steam generators
USE **boilers**

steam turbines
GS turbomachinery
. turbines
. . **steam turbines**
RT axial flow turbines
combined cycle power generation
gas turbine engines
gas turbines
turbogenerators
two stage turbines

stearates
GS esters
. **stearates**
RT soaps

stearothermophilus
GS microorganisms
. bacteria
. . Bacillus
. . . **stearothermophilus**

steatite
USE **talc**

steel structures
GS welded structures
. **steel structures**
RT composite structures
construction
rigid structures
∞ structures

steels
GS alloys
. iron alloys
. . **steels**
. . . bainitic steel
. . . carbon steels
. . . . low carbon steels
. . . chromium steels
. . . Croloy
. . . high strength steels
. . . . maraging steels
. . . nickel steels
. . . stainless steels
. . . . austenitic stainless steels
. . . . ferritic stainless steels
. . . . martensitic stainless steels
RT austenite
bainite
cementite
ferrites
hydrogen embrittlement
martensite

pearlite

steep gradient aircraft
USE **V/STOL aircraft**

steepest ascent method
USE **steepest descent method**

steepest descent method
UF *steepest ascent method*
RT calculus of variations
dynamic programming
∞ methodology
minima
optimization
parameter identification
system identification

steepness
USE **slopes**

steerable antennas
DEF Directional antennas whose major lobe can be readily slewed in direction.
GS antennas
. directional antennas
. . **steerable antennas**
. . . inertialess steerable antennas
arrays
. antenna arrays
. . **steerable antennas**
. . . inertialess steerable antennas
RT beam steering
phased arrays
radar antennas

steering
GS **steering**
. beam steering
RT ∞ control
control rockets
controllability
electron optics
∞ flight
focusing
suspension systems (vehicles)

steering rockets
USE **control rockets**

Stefan–Boltzmann law
DEF One of the radiation laws which states that the amount of energy radiated per unit time from a unit surface area of an ideal black body is proportional to the fourth power of the absolute temperature of the black body.
GS laws
. radiation laws
. . **Stefan–Boltzmann law**
RT electromagnetic radiation
emissivity
flux (rate)
heat radiators
Kirchhoff law of radiation
radiative heat transfer

Stellar (star tracker)
USE **CCD star tracker**

stellar activity
DEF A general term encompassing stellar phenomena such as stellar flares, starspot activity, magnetic activity, nuclear fusion, etc.
GS **stellar activity**
. solar activity
. . faculae
. . solar flares
. . solar prominences
. . solar storms
. . spicules
. . sunspots
. starspots
. . sunspots
. stellar flares
. . solar flares
RT flare stars
∞ flares
magnetic disturbances
magnetohydrodynamics
photosphere
starquakes
stars
stellar convection
stellar interiors
stellar luminosity
stellar magnetic fields
stellar mass ejection
stellar oscillations
stellar physics
stellar radiation
sunspot cycle

stellar atmospheres
GS environments
. extraterrestrial environments
. . **stellar atmospheres**
. . . chromosphere
. . . solar atmosphere
. . . . solar transition region
RT ∞ atmospheres
cool stars
limb brightening
limb darkening
local thermodynamic equilibrium
metallic stars
pulsar magnetospheres
radiative transfer
satellite atmospheres
starspots
stellar convection
stellar coronas
stellar interiors
stellar magnetospheres

stellar color
DEF The particular wavelengths of optical radiation emitted by a star.
GS electromagnetic properties
. optical properties
. . color
. . . **stellar color**
RT color–color diagram
color–magnitude diagram
stellar luminosity
stellar magnitude
stellar spectra
stellar spectrophotometry

stellar composition
GS composition (property)
. chemical composition
. . **stellar composition**
RT abundance
B stars
carbon stars
isotope ratios
stars
stellar models
stellar physics
stellar structure

stellar convection
(added June 1992)
GS convection
. **stellar convection**
. . solar convection (astronomy)
RT Benard cells
convection currents
convective flow
dynamo theory
fluid flow
free convection
Rayleigh–Benard convection
stellar activity
stellar atmospheres
stellar interiors
stellar magnetic fields
stellar physics

stellar cores
DEF The central portion of the interior of stars.
GS cores
. **stellar cores**
stellar interiors
. **stellar cores**
RT astrophysics
degenerate matter
gravitational collapse
planetary cores
solar interior
stars
stellar coronas
stellar structure

stellar coronas
DEF Ionized regions about stars formed by x rays emitted during stellar flares. First discovery of a stellar corona was made aboard the Dutch ANS satellite (1975) when permanent x ray emission from the star SIRIUS was detected and measured.
GS coronas
. **stellar coronas**
. . solar corona
. . . coronal holes
. . . coronal loops
RT coronal mass ejection
ionization
Orion nebula
stellar atmospheres
stellar cores

stellar Doppler shift
USE **Doppler effect**

stellar envelopes
UF *circumstellar matter*
RT astrophysics
cool stars
∞ envelopes
interstellar matter
R Coronae Borealis stars
shell stars
stellar mass accretion
stellar mass ejection
stellar structure
symbiotic stars
Wolf–Rayet stars

stellar evolution
GS evolution (development)
. **stellar evolution**
. . star formation
. . **stellar mass accretion**
RT astrophysics
asymptotic giant branch stars
brown dwarf stars
color–magnitude diagram
cosmology
degenerate matter
galactic evolution
gravitational instability
Hertzsprung–Russell diagram

horizontal branch stars
interstellar extinction
late stars
main sequence stars
neutral currents
planetary evolution
pre-main sequence stars
protoplanets
protostars
red giant stars
solar system evolution
star formation rate
stellar interiors
stellar physics
subgiant stars

stellar fields
USE **star distribution**

stellar flares
DEF Ejections of material from stars in eruptions that last from a few minutes to an hour or more.
GS stellar activity
. **stellar flares**
. . solar flares
RT cataclysmic variables
flare stars
∞ flares
stellar luminosity
stellar physics
stellar radiation

stellar gravitation
GS gravitation
. **stellar gravitation**
. . solar gravitation
RT gravitational binding energy
gravitational fields
gravitational instability
gravitational lenses
stars
stellar mass
stellar systems

stellar interiors
DEF The subsurface portions of stars.
GS **stellar interiors**
. solar interior
. stellar cores
RT astrophysics
convection
gravitational collapse
nuclear fusion
stars
stellar activity
stellar atmospheres
stellar convection
stellar evolution
stellar models
stellar physics
stellar structure

stellar luminosity
GS electromagnetic properties
. optical properties
. . luminosity
. . . **stellar luminosity**
RT brightness
brightness distribution
Hertzsprung-Russell diagram
horizontal branch stars
limb brightening
limb darkening
luminescence
mass to light ratios
red dwarf stars
red giant stars
starspots
stellar activity
stellar color
stellar flares
stellar parallax
stellar physics
Wolf-Rayet stars

stellar magnetic fields
GS magnetic fields
. **stellar magnetic fields**
. . solar magnetic field
RT electromagnetic fields
interstellar magnetic fields
magnetic field configurations
plasmas (physics)
pulsar magnetospheres
starspots
stellar activity
stellar convection
stellar magnetospheres

stellar magnetospheres
(added July 1988)
GS **stellar magnetospheres**
. pulsar magnetospheres
RT magnetic fields
∞ magnetospheres
stellar atmospheres
stellar magnetic fields

stellar magnitude
DEF The measure of the relative brightness of a star. Stellar magnitudes are expressed in a variety of ways, according to the method or process of observation or determination.
GS magnitude
. **stellar magnitude**
RT astronomy
color-magnitude diagram
∞ intensity
luminance
luminous intensity
red dwarf stars
stars
stellar color
stellar parallax

stellar mass
GS mass
. **stellar mass**
RT degenerate matter
galactic mass
main sequence stars
mass to light ratios
massive stars
novae
stellar gravitation
stellar temperature
supernovae
variable stars

stellar mass accretion
DEF Process by which a star accumulates matter as it moves through dense clouds of interstellar gas.
GS evolution (development)
. stellar evolution
. . **stellar mass accretion**
RT accretion disks
cosmology
dwarf novae
galactic evolution
gravitational effects
interstellar gas
interstellar matter
protostars
star formation
stellar envelopes
stellar physics
symbiotic stars
x ray binaries

stellar mass ejection
GS ejection
. **stellar mass ejection**
. . coronal mass ejection
RT asymptotic giant branch stars
cataclysmic variables
dwarf novae
magnetic clouds
novae
R Coronae Borealis stars
stellar activity
stellar envelopes
supernovae
variable stars
Wolf-Rayet stars

stellar models
GS models
. astronomical models
. . **stellar models**
RT astronomy
solar neutrinos
solar oscillations
stellar composition
stellar interiors
supermassive stars

stellar motions
GS **stellar motions**
. stellar orbits
. stellar oscillations
. . solar oscillations
. stellar rotation
. . solar rotation
RT companion stars
corotation
Doppler effect
Doppler-Fizeau effect
double stars
galactic rotation
Hipparcos satellite
∞ motion
sidereal time
. stellar parallax
stellar systems

stellar occultation
GS occultation
. **stellar occultation**
RT asteroid detection
eclipsing binary stars
lunar occultation

stellar orbits
SN (EXCLUDES PLANETARY ORBITS)
GS orbits
. **stellar orbits**
stellar motions
. **stellar orbits**
RT celestial mechanics
Nemesis (star)
retrograde orbits

stellar oscillations
DEF Irregular fluctuations of the stellar atmospheres.
GS oscillations
. **stellar oscillations**
. . solar oscillations
stellar motions
. **stellar oscillations**
. . solar oscillations
RT astronomical models

astronomy
astrophysics
atmospheric models
catachysmic variables
Mira variables
stars
stellar activity
symbiotic **stars**
variable stars

stellar parallax
DEF The subtended angle at a star formed by the mean radius of the Earth's orbit; it indicates distance to a star.
GS parallax
. **stellar parallax**
RT astrometry
binary stars
Hipparcos satellite
solar parallax
stellar luminosity
stellar magnitude
stellar motions

stellar physics
DEF A term that encompasses the physical properties of stars, such as luminosity, size, mass, density, temperature, chemical composition, evolution, activity, etc.
GS astrophysics
. **stellar physics**
. . solar physics
RT local thermodynamic equilibrium
nuclear astrophysics
nuclear fusion
∞ science
starquakes
stellar activity
stellar composition
stellar convection
stellar evolution
stellar flares
stellar interiors
stellar luminosity
stellar mass accretion
stellar radiation
stellar rotation
stellar structure
supernovae

stellar radiation
GS extraterrestrial radiation
. **stellar radiation**
. . stellar winds
RT cosmic rays
electromagnetic radiation
galactic radiation
gamma ray bursts
Herbig–Haro objects
interstellar extinction
interstellar radiation
light curve
microwave emission
polarized electromagnetic radiation
∞ radiation
radiative transfer
radio bursts
radio stars
solar radiation
starspots
stellar activity
stellar flares
stellar physics
x ray stars

stellar rotation
GS gyration
. rotation
. . **stellar rotation**
. . . solar rotation
stellar motions
. **stellar rotation**
. . solar rotation
RT angular momentum
corotation
planetary rotation
starquakes
stellar physics

stellar spectra
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . **stellar spectra**
. . . . solar spectra
RT absorption **spectra**
astronomical spectroscopy
color–color diagram
continuous spectra
cool stars
emission spectra
F stars
G stars
Herbig–Haro objects
Hertzsprung–Russell diagram
horizontal branch stars
infrared spectra
K stars
line spectra
molecular spectra
peculiar stars
Seyfert galaxies
stellar color
symbiotic stars
ultraviolet spectra
visible spectrum
x ray spectra

stellar spectrophotometry
GS optical measurement
. photometry
. . astronomical photometry
. . . **stellar spectrophotometry**
. . spectrophotometry
. . . **stellar spectrophotometry**
spectroscopy
. astronomical spectroscopy
. . **stellar spectrophotometry**
. spectrophotometry
. . **stellar spectrophotometry**
RT color–color diagram
horizontal branch stars
infrared photometry
peculiar stars
spectroscopic telescopes
stellar color

stellar structure
RT chromosphere
coronal holes
dense plasmas
metallic stars
peculiar stars
solar atmosphere
solar corona
solar interior
starquakes
stellar composition
stellar cores
stellar envelopes
stellar interiors
stellar physics
∞ structures
supermassive stars

stellar systems
SN (EXCLUDES PLANETARY SYSTEMS)
DEF Gravitationally bound groups of stars. SN (Excludes planetary systems).
GS celestial bodies
. **stellar systems**
RT binary stars
galactic clusters
galactic rotation
galactic structure
galaxies
gravitational collapse
gravitational effects
interacting galaxies
Nemesis (star)
Sigma Orionis
star clusters
star distribution
stellar gravitation
stellar motions
triple stars

stellar temperature
GS temperature
. **stellar temperature**
RT cool stars
stellar mass
symbiotic stars

stellar winds
GS extraterrestrial radiation
. stellar radiation
. . **stellar winds**
particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . space plasmas
. . . . . **stellar winds**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . space plasmas
. . . . . **stellar winds**
RT chromosphere
cosmic plasma
galactic winds
intergalactic media
interstellar gas
radiation pressure
solar wind
solar wind velocity

stellarators
DEF Experimental thermonuclear devices where containment in a magnetic field is achieved by closing the field upon itself and thus allowing the particles to perform endless spiral motion.
GS nuclear reactors
. fusion reactors
. . **stellarators**
RT helical windings
heliotrons
magnetohydrodynamics
pinch **effect**
plasma control
thermal instability
thermonuclear power generation
thermonuclear reactions
toroidal plasmas

Stellite (trademark)
UF *Haynes Stellite*
RT chromium alloys
cobalt alloys
tungsten alloys

stems
RT plants (botany)

stencil processes
RT printing
reproduction (copying)

step faults
USE **geological faults**

step functions
GS functions (mathematics)
. **step functions**
RT dynamic response
frequency response
intervals
ramp functions
reaction time
∞ steps

step recovery diodes
DEF Varactors in which forward voltage injects carriers across the junction, but before the carriers can combine, the voltage reverses and carriers return to their origin in a group. The result is an abrupt cessation of reverse current and a harmonic rich waveform.
GS electronic equipment
. diodes
. . semiconductor diodes
. . . junction diodes
. . . . **step recovery diodes**
. solid state devices
. . semiconductor devices
. . . junction diodes
. . . . **step recovery diodes**
RT switching

steppes
GS landforms
. **steppes**
RT arid lands
desertification
grasslands
plains

stepping motors
DEF Motors whose rotations are in short and essentially uniform angular movements rather than a continuous motion.
GS motors
. electric motors
. . **stepping motors**
RT actuators
servocontrol
servomechanisms

stepping switches
GS switches
. electric switches
. . **stepping switches**

∞ **steps**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT backward facing steps
programming (scheduling)
stairsteps
step functions

stereochemistry
DEF Chemistry dealing with the arrangement of atoms and molecules in three dimensions.
RT carbohydrates
∞ chemistry
isomers
optical activity
spatial distribution
x ray analysis

stereography
USE **stereophotography**

stereolithography
USE **lithography**

stereophonics
DEF The use of two sound channels to mimic normal hearing. Stereophonic satellite broadcasting has now been developed.
RT acoustics
hearing

stereophotography
UF *stereography*
stereoscopic photography
GS imagery
. photography
. . stereoscopy
. . . **stereophotography**
RT aerial photography
black and white photography
cinematography
color photography
Mapsat
photogrammetry
SPOT (French satellite)

stereoscopic photography
USE **stereophotography**

stereoscopic vision
GS vision
. **stereoscopic vision**
RT binocular vision
stereoscopy

stereoscopy
GS imagery
. photography
. . **stereoscopy**
. . . stereophotrgsphy
RT stereoscopic vision

stereotelevision
GS communication equipment
. **stereotelevision**
telecommunication
. **stereotelevision**
television systems
. **stereotelevision**
RT closed circuit television
color television
communicating
educational television
satellite television
spacecraft television

sterilization
GS cleaning
. **sterilization**
. . chemical sterilization
. . spacecraft sterilization
RT air purification
antifouling
antiseptics
bactericides
baking
decontamination
fumigation
gnotobiotics
housekeeping (spacecraft)
ionizing radiation
mercury lamps
pasteurizing
purification
ultraviolet radiation

sterilization effects
RT chemical effects
corrosion
decontamination
degradation
∞ deoxification
∞ effects
radiation effects
spacecraft sterilization
temperature effects
thermal degradation

stems
USE **afterbodies**

sternum
GS anatomy
. musculoskeletal system
. . bones
. . . **sternum**
RT thorax

steroids
GS organic compounds
. lipids
. . **steroids**
. . . cholesterol
. . . corticosteroids
. . . . aldosterone
. . . . hydroxycorticosteroid
. . . . . cortisone
. . . estrogens
. . . prostaglandins
RT antibiotics
hormones

stethoscopes
GS medical equipment
. **stethoscopes**
RT physicians

Stieltjes integral
GS analysis (mathematics)
. real variables
. . measure and integration
. . . **Stieltjes integral**
RT probability theory

stiff structures
USE **rigid structures**

stiffening
RT reinforcement (structures)
ribs (supports)
webs (supports)

stiffness
DEF The ratio of change of force (or torque) to the corresponding change in translational (or rotational) displacement of an elastic element.
GS mechanical properties
. **stiffness**
RT bending
deformation
flexibility
modulus of elasticity
∞ rigidity
softness
structural stability

stiffness matrix
GS algebra
. vector spaces
. . matrices (mathematics)
. . . **stiffness matrix**
RT structural analysis
structural members

stigmatism
GS electromagnetic properties
. optical properties
. . **stigmatism**
RT astigmatism
focusing
lens design
lenses

stilbene
GS organic compounds
. hydrocarbons
. . **stilbene**
RT dyes
hexanitrostilbene

stills
GS separators
. **stills**
RT concentrators
distillation equipment

stimulants
GS drugs
. **stimulants**
. . atropine
. . caffeine
. . central nervous system stimulants
. . noradrenaline
. . norepinephrine
RT aminophylline
epinephrine
strychnine

stimulated emission
GS emission
. **stimulated emission**
RT argon lasers
carbon dioxide lasers
carbon lasers
carbon monoxide lasers
coherent electromagnetic radiation
coherent light
electron emission
electron pumping
gallium arsenide lasers
gas lasers
gas masers
HCN lasers
interstellar masers
lasers
light emission
masers
nuclear pumping
optical pumping
particle emission
photoelectric emission
population inversion
rapid ballistics identification
rare gas–halide lasers
self sustained emission
surface emitting lasers
TEA lasers
two–wavelength lasers
ultrashort pulsed lasers
ultraviolet lasers

stimulated emission devices
UF *quantum generators*
GS **stimulated emission devices**
. lasers
. . airborne lasers
. . argon lasers
. . atmospheric lasers
. . carbon lasers
. . chemical lasers
. . . HCL lasers
. . . . HCL argon lasers
. . . chemical oxygen–iodine lasers
. . continuous wave lasers
. . distributed feedback lasers
. . free electron lasers
. . gamma ray lasers
. . gas lasers
. . . carbon dioxide lasers
. . . carbon monoxide lasers
. . . DF lasers
. . . excimer lasers
. . . HCL lasers
. . . . HCL argon lasers
. . . HCN lasers
. . . helium–neon lasers
. . . HF lasers
. . . nitrogen lasers
. . . rare gas–halide lasers
. . . . krypton fluoride lasers
. . . . xenon chloride lasers
. . . . xenon fluoride lasers
. . . TEA lasers
. . . ultraviolet lasers
. . gasdynamic lasers
. . glass lasers
. . high power lasers
. . . Nova Laser System
. . . Shiva laser system
. . infrared lasers
. . injection lasers
. . iodine lasers
. . . chemical oxygen–iodine lasers
. . liquid lasers
. . metal vapor lasers
. . neodymium lasers
. . nuclear pumped lasers
. . organic lasers
. . . dye lasers
. . plasmadynamic lasers
. . pulsed lasers
. . . Q switched lasers
. . . ultrashort pulsed lasers
. . . ultraviolet lasers
. . Raman lasers
. . ring lasers
. . semiconductor lasers
. . . aluminum gallium arsenide lasers
. . . gallium arsenide lasers
. . . quantum well lasers
. . . YLF lasers
. . solar–pumped lasers
. . solid state lasers
. . . aluminum gallium arsenide lasers
. . . DBR lasers
. . . fiber lasers
. . . gallium arsenide lasers
. . . quantum well lasers
. . . ruby lasers
. . . YAG lasers
. . . YLF lasers
. . spaceborne lasers
. . surface emitting lasers
. . tunable lasers
. . two–wavelength lasers
. . waveguide lasers
. . . fiber lasers
. . x ray lasers
. masers
. . gas masers
. . . hydrogen masers
. . interstellar masers
. . proton masers
. . traveling wave masers
. . water masers
RT amplifiers
coherent electromagnetic radiation
diffraction radiation
electron pumping
∞ generators
laser arrays
laser cavities
laser pumping
laser weapons
lasing
light transmission
nuclear pumping
optical pumping
rapid ballistics identification
subharmonic generators
transient oscillations

stimulation
GS **stimulation**
. auditory stimuli
. sensory stimulation
RT activation
activation (biology)
actuation
cloud seeding
gas injection
initiation
pressurizing
starting

∞ **stimuli**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT arousal
auditory stimuli
caloric stimuli
electric stimuli
motivation
psychological factors
subliminal stimuli
visual stimuli

Stirling cycle
DEF A theoretical heat engine cycle in which heat is added at constant volume, followed by isothermal expansion with heat addition. The heat is then rejected at constant volume, followed by isothermal compression with heat rejection.
GS cycles
. thermodynamic cycles
. . **Stirling cycle**
RT Carnot cycle
solar dynamic power systems
Stirling engines

Stirling engines
GS engines
. external combustion engines
. . **Stirling engines**
. piston engines
. . **Stirling engines**
RT automobile engines
engine design
engine tests
free–piston engines
linear alternators
Stirling cycle

stirring
RT aeration
dispersing
mixers
suspending (mixing)
swirling

stishovite
DEF A mineral consisting essentially of silicon trioxide.
GS chalcogenides
. oxides
. . dioxides

. . . silicon dioxide
. . . . quartz
. . . . . **stishovite**
. . silicon oxides
. . . silicon dioxide
. . . . quartz
. . . . . **stishovite**
minerals
. quartz
. . **stishovite**
silicon compounds
. silicon oxides
. . silicon dioxide
. . . quartz
. . . . **stishovite**
RT coesite
Earth crust
Earth mantle
rutile

stochastic processes
DEF Ordered sets of observations in one or more dimensions, each being considered as a sample of one item from a probability distribution. Used for Poisson process.
UF *poisson process*
GS **stochastic processes**
. Markov processes
. . Markov chains
. random processes
. . random walk
RT ∞ applications of mathematics
attractors (mathematics)
autoregressive moving average
chaos
coherence coefficient
decision theory
ergodic process
events
Fokker–Planck equation
game theory
information theory
Kakutani theorem
Kalman–Schmidt filtering
martingales
mathematical models
Monte Carlo method
operations research
probability theory
queueing theory
random errors
random noise
random signals
state estimation
statistical analysis
∞ statistics
time dependence
time functions
time series analysis

stockpiling
RT accumulations
collection
inventory management
logistics
reserves
∞ storage
strategic materials

stoichiometry
RT chemical reactions
∞ chemistry
∞ composition
composition (property)
formulations
material balance
phase diagrams

Stokes flow
GS fluid flow
. incompressible flow
. . **Stokes flow**
. viscous flow
. . **Stokes flow**
RT Oseen approximation
steady flow

∞ **Stokes law**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT laws
Maxwell equation
Stokes law (fluid mechanics)
Stokes theorem (vector calculus)

Stokes law (fluid mechanics)
RT settling
∞ Stokes law
viscosity

Stokes law of radiation
GS laws
. radiation laws
. . **Stokes law of radiation**
RT incident radiation
luminescence
∞ radiation
wavelengths

Stokes theorem (vector calculus)
GS algebra
. vector spaces
. . **Stokes theorem (vector calculus)**
theorems
. **Stokes theorem (vector calculus)**
RT ∞ Stokes law

Stokes–Beltrami equation
RT ∞ equations
Laplace equation
stream functions (fluids)

STOL aircraft
USE **short takeoff aircraft**

stomach
GS anatomy
. digestive system
. . gastrointestinal system
. . . **stomach**
RT abdomen

stones (rocks)
USE **rocks**

stony meteorites
GS celestial bodies
. meteorites
. . **stony meteorites**
. . . achondrites
. . . . Bondoc meteorite
. . . . chassignites
. . . . Kapoeta achondrite
. . . . nakhlites
. . . . Norton County achondrite
. . . . shergottites
. . . . ureilites
. . . carbonaceous meteorites
. . . . carbonaceous chondrites
. . . . . Alais meteorite
. . . . . Allende meteorite
. . . . . Cold Bokkeveld meteorite
. . . . . Ivuna meteorite
. . . . . Murchison meteorite
. . . . . Murray meteorite
. . . . . Orgueil meteorite
. . . . . Tonk meteorite
. . . . ureilites
. . . chondrites
. . . . Bruderheim meteorite
. . . . carbonaceous chondrites
. . . . . Alais meteorite
. . . . . Allende meteorite
. . . . . Cold Bokkeveld meteorite
. . . . . Ivuna meteorite
. . . . . Murchison meteorite
. . . . . Murray meteorite
. . . . . Orgueil meteorite
. . . . . Tonk meteorite
. . . . Harleton meteorite
. . . . Hvittis chondrite
. . . . Okhansk meteorite
. . . . Pantar chondrites
. . . . Pribram meteorite
. . . tektites
. . . . australites
. . . . bediasites
. . . Tunguska meteorite
RT coesite
iron meteorites
Lazarev meteorite
meteoritic composition
meteoritic microstructures
schreibersite
stony–iron meteorites

stony–iron meteorites
(added December 1988)
GS celestial bodies
. meteorites
. . **stony–iron meteorites**
RT iron meteorites
stony meteorites

stopcocks
USE **cocks**

stopping
UF *terminating*
GS **stopping**
. thrust termination
RT blocking
cancellation
closing
constrictions
containment
damping
deceleration
delay
elimination
∞ holding
∞ inhibition
optimization
plugs
prevention
∞ reduction
retarding
sealing

stopping power
RT absorbers (materials)
absorption cross sections
∞ cross sections
density (mass/volume)
neutron cross sections
radiation absorption
radiation shielding
scattering cross sections

storable propellants
GS consumables (spacecraft)
. **storable propellants**
propellants
. **storable propellants**
RT cryogenic rocket propellants

gaseous rocket propellants
gelled rocket propellants
ground support equipment
high temperature propellants
hydrocarbon fuels
hypergolic rocket propellants
liquid rocket propellants
propellant additives
propellant decomposition
propellant evaporation
propellant sensitivity
propellant storability
propellant storage
rocket propellants
solid propellants
space storage

∞ **storage**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT buffer storage
computer storage devices
core storage
cryogenic fluid storage
data storage
disposal
document storage
energy storage
external store separation
external stores
fluid filled shells
handling equipment
inventories
inventory controls
inventory management
ion storage
liquid filled shells
logistics
logistics management
magnetic storage
materials handling
missile silos
missile storage
packaging
pipelines
preserving
propellant storage
racks (frames)
recording
reserves
retaining
safety
space storage
stockpiling
storage tanks
stowage (onboard equipment)
underground storage
waste disposal
wing–fuselage stores

storage batteries
SN (RECHARGEABLE BATTERIES)
UF *secondary batteries*
GS electrochemical cells
. **electric batteries**
. . **storage batteries**
. . . lead acid batteries
. . . nickel cadmium batteries
. . . nickel hydrogen batteries
. . . nickel zinc batteries
. . . silver cadmium batteries
. . . silver hydrogen batteries
. . . silver zinc batteries
. . . zinc–bromide batteries
. . . zinc–chlorine batteries
RT alkaline batteries
battery chargers
charge efficiency
dry cells
electrolytes
metal air batteries
nickel iron batteries
nonaqueous electrolytes
primary batteries
pulse charging
regenerative fuel cells

storage rings (particle accelerators)
UF *electron ring accelerators*
GS particle accelerators
. cyclic accelerators
. . synchrotrons
. . . **storage rings (particle accelerators)**
RT ∞ accelerators
Q values (nuclear physics)
∞ rings
superconducting super collider

storage stability
GS life (durability)
. **storage stability**
stability
. **storage stability**
RT decomposition
liquid sloshing
long term effects
static stability
surface stability
thermal stability

storage tanks
GS tanks (containers)
. **storage tanks**
RT cryogenic fluid storage
cylindrical tanks
expulsion bladders
external tanks
fuel tanks
pipelines
pressure vessels
propellant tanks
space storage
spherical tanks
∞ storage
tank geometry
underground storage
wing–fuselage stores

store release
USE **external store separation**

storm damage
GS damage
. **storm damage**
RT cyclones
flood control
floods
gusts
hailstorms
hurricanes
landslides
precipitation (meteorology)
rainstorms
snow cover
storm surges
storms
thunderstorms
tornadoes
tropical storms
typhoons
wind (meteorology)

storm enhancement
GS weather modification
. **storm enhancement**
RT climatology
hailstorms
precipitation (meteorology)
rainstorms
snowstorms
storms
storms (meteorology)

storm suppression
GS weather modification
. **storm suppression**
RT climatology
hailstorms
ice prevention
precipitation (meteorology)
rainstorms
snowstorms
storms

storm surges
RT coasts
hurricanes
ocean surface
oceanography
storm damage
storms (meteorology)
surges

storms
GS **storms**
. ionospheric storms
. . sudden ionospheric disturbances
. magnetic storms
. . polar substorms
. noise storms
. solar storms
. storms (meteorology)
. . cyclones
. . . hurricanes
. . . . Anna hurricane
. . . typhoons
. . downbursts
. . . microbursts (meteorology)
. . dust storms
. . hailstorms
. . rainstorms
. . . thunderstorms
. . snowstorms
. . tornadoes
. . tropical storms
. . . hurricanes
. . . . Anna hurricane
. . . typhoons
RT climatology
cold fronts
∞ disturbances
flood damage
floods
fronts (meteorology)
gusts
precipitation (meteorology)
snow cover
solar terrestrial interactions
storm damage
storm enhancement
storm suppression
sudden storm commencements
warm fronts
weather forecasting
wind (meteorology)

storms (meteorology)
GS storms
. **storms (meteorology)**

. . cyclones
. . . hurricanes
. . . . Anna hurricane
. . . typhoons
. . downbursts
. . . microbursts (meteorology)
. dust storms
. . hailstorms
. . rainstorms
. . . thunderstorms
. . snowstorms
. . tornadoes
. . tropical storms
. . . hurricanes
. . . . Anna hurricane
. . . typhoons
RT Alpine meteorology
climatology
cyclogenesis
flight conditions
flood control
flood damage
flood predictions
floods
ground wind
gusts
hail
ice
meteorological parameters
meteorology
precipitation (meteorology)
snow
snow cover
squalls
storm enhancement
storm surges
watersheds
weather forecasting
wind (meteorology)

StormSat satellite
DEF A synchronous Earth-pointing satellite for severe storms studies. Used for Severe Storms Observing Satellite.
UF *Severe Storms Observing Satellite*
GS artificial satellites
. synchronous satellites
. . **StormSat satellite**
RT NASA programs

Stoss-and-Lee topography
USE **glacial drift**

STOVL aircraft
(added July 1991)
UF *short takeoff & vertical landing aircraft*
RT fighter aircraft
lift augmentation
powered lift aircraft
short takeoff aircraft
V/STOL aircraft
vertical landing

stowage (onboard equipment)
RT logistics
onboard equipment
portable equipment
provisioning
space logistics
space rations
∞ storage

straight wings
USE **rectangular wings**

strain aging
USE **precipitation hardening**

strain distribution
GS distribution (property)
. **strain distribution**
RT crack propagation
deformation
elastic deformation
fracture mechanics
plastic deformation
strain measurement
strain rate
stress concentration
stress distribution
stress-strain relationships

strain energy methods
GS structural analysis
. energy methods
. . **strain energy methods**
RT∞ energy
∞ methodology
seismic energy

strain energy release rate
GS rates (per time)
. **strain energy release rate**
RT elastic deformation
elastic properties
relaxation (mechanics)
strain rate
stress relaxation

strain fatigue
USE **fatigue (materials)**

strain gage accelerometers
GS measuring instruments
. accelerometers
. . **strain gage accelerometers**
RT pressure gages

strain gage balances
GS measuring instruments
. indicating instruments
. . weight indicators
. . . **strain gage balances**
RT pressure gages

strain gages
DEF Instruments used to measure the strain of distortion in a member or test specimen (such as a structural part) subjected to a force.
GS measuring instruments
. **strain gages**
RT cable force recorders
deformeters
elastometers
extensometers
flight load recorders
mechanical measurement
piezoelectric gages
pressure gages
rosette shapes
shock measuring instruments
strain measurement
stress measurement
temperature inversions
tensometers
transducers
weight indicators

strain hardening
GS hardening (materials)
. work hardening
. . **strain hardening**
RT aging (materials)
aging (metallurgy)
precipitation hardening
residual stress
shot peening
stress relieving
temperature inversions

strain measurement
RT∞ measurement
shearography
smart structures
strain distribution
strain gages
strain rate
stress-strain diagrams
stress-strain relationships
structural strain

strain rate
GS rates (per time)
. **strain rate**
RT impact tests
loading rate
mechanical properties
Portevin-le Chatelier effect
strain distribution
strain energy release rate
strain measurement
temperature inversions

strain softening
USE **plastic deformation**

straits
DEF Relatively narrow waterways connecting two larger bodies of water.
GS passageways
. **straits**
. . Torres Strait
RT canals
Gibraltar
lakes
seas
water
waterways

strakes
GS structural members
. **strakes**
RT aerodynamic configurations
hulls (structures)
longerons
metal strips
rectangular panels
reinforcement (structures)
water tunnel tests

strands
RT cables (ropes)
ceramic fibers
cordage
fibers
∞ filaments
mesh
yarns

strange attractors
DEF Abstract geometrical objects in theoretical physics that represent motion which is bounded but not periodic. Their detailed behavior is sensitive to external perturbations, but their overall qualitative behavior is stable. They are of particular interest in the study of turbulence.
GS attractors (mathematics)
. **strange attractors**
RT chaos
fractals
imbeddings (mathematics)
iterative solution
nonlinear systems
numerical stability

perturbation theory
∞ physics
recursive functions
state vectors
theoretical physics
turbulence

strangeness
RT hyperons
mesons
parity
quantum mechanics

strapdown inertial guidance
GS guidance (motion)
. inertial guidance
. . **strapdown inertial guidance**
RT inertial navigation

straps
RT anchors (fasteners)
∞ bands
clamps
fasteners
holders

strata
UF *stratified layers*
GS **strata**
. substrates
RT anticlines
bedrock
beds (geology)
crossbedding (geology)
flat layers
folds (geology)
geosynclines
∞ layers
stratification
synclines
underground acoustics

strategic materials
DEF Critical raw materials whose foreign source of supply is uncertain and subject to potential cutoff. Examples of such materials are chromium, cobalt, manganese, and platinum group metals.
RT chromium
cobalt
manganese
∞ materials
metals
stockpiling
technology assessment

strategy
RT decision theory
deployment
electronic warfare
game theory
∞ operations
operations research
risk
warfare

stratification
GS **stratification**
. atmospheric stratification
. intercalation
RT anticlines
bedrock
crossbedding (geology)
flat layers
folds (geology)
geosynclines
∞ layers
static stability
strata
stratified flow
stratigraphy
synclines
temperature gradients
thermoclines

stratified flow
GS fluid flow
. laminar flow
. . **stratified flow**
RT baroclinic waves
baroclinity
coaxial flow
flow geometry
shear flow
stratification

stratified layers
USE **strata**

stratigraphy
DEF That branch of geology which treats of the formation, composition, sequence, and correlation of the stratified rocks as part of the Earth's crust.
RT anticlines
bedrock
beds (geology)
crossbedding (geology)
∞ formation
formations
geochronology
geology
geophysics
geosynclines
hydrogeology
mines (excavations)
paleontology
particle tracks
petrology
plateaus
regolith
rocks
sedimentary rocks
stratification
synclines
wells

stratocumulus clouds
GS clouds (meteorology)
. **stratocumulus clouds**
RT cumulus clouds
stratus clouds

Stratofortress aircraft
USE **B-52 aircraft**

Stratojet aircraft
USE **B-47 aircraft**

stratopause
SN (ALTITUDE APPROXIMATELY 50 KM)
GS Earth atmosphere
. middle atmosphere
. . stratosphere
. . . **stratopause**
RT mesopause
mesosphere

Stratoscope 1 telescope
USE **stratoscope telescopes**

Stratoscope 2 telescope
USE **stratoscope telescopes**

stratoscope telescopes
UF *Stratoscope 1 telescope*
Stratoscope 2 telescope
GS telescopes
. spectroscopic telescopes
. . **stratoscope telescopes**
RT balloons
reflecting telescopes
refracting telescopes

stratosphere
SN (ALTITUDE RANGE BETWEEN APPROXIMATELY 15 AND 50 KM)
DEF Region of the atmosphere between the troposphere and mesosphere, having a lower boundary about 8 km. at the poles to 15 km. at the equator and an upper boundary of about 50 km.
GS Earth atmosphere
. middle atmosphere
. . **stratosphere**
. . . ozonosphere
. . . stratopause
RT chemosphere
homosphere
ice clouds
isothermal layers
stratospheric warming

stratosphere radiation
DEF Any infrared radiation involved in the complex infrared exchange continually proceeding within the stratosphere.
GS atmospheric radiation
. **stratosphere radiation**
RT corpuscular radiation
electromagnetic radiation
∞ radiation
sky radiation
tropospheric radiation

Stratospheric Aerosol & Gas Experiment
USE **SAGE satellite**

Stratospheric Observatory for IR Astronomy
USE **SOFIA (airborne observatory)**

stratospheric warming
(added October 1988)
DEF A temperature rise in the global stratosphere.
GS heating
. atmospheric heating
. . **stratospheric warming**
RT anomalous temperature zones
atmospheric heat budget
atmospheric temperature
climate change
global warming
isothermal layers
stratosphere

Stratotanker aircraft
USE **C-135 aircraft**

stratus clouds
GS clouds (meteorology)
. **stratus clouds**
RT fog
nimbostratus clouds
stratocumulus clouds

streak cameras
DEF Cameras for measuring radiation pulses by deflection of an electron beam.
GS optical equipment
. cameras
. . **streak cameras**
photographic equipment
. cameras
. . **streak cameras**
RT camera shutters

cinematography
lenses

streak photography
DEF The process of taking a time exposure photograph of a tracer particle in a fluid; the photograph reveals the motion of each tracer particle in the form of a streak which may be interpreted as a velocity vector.
GS imagery
. photography
. . **streak photography**
RT cameras
electro-optical photography
high speed cameras
imaging techniques

stream functions (fluids)
RT incompressible flow
potential theory
Stokes-Beltrami equation
streams
two dimensional flow

streamline flow
USE **laminar flow**

streamlined bodies
GS symmetrical bodies
. **streamlined bodies**
. . fairings
RT aerodynamic configurations
airfoils
axisymmetric bodies
∞ bodies
bodies of revolution
missile bodies
ogives
slender bodies
streamlining
towed bodies

streamlining
RT acoustic streaming
air flow
aircraft design
aircraft structures
airfoil profiles
airfoils
fairings
fluid dynamics
friction reduction
helicopter design
hydrofoils
∞ profiles
skin friction
streamlined bodies

streams
DEF Bodies of flowing water, great or small, contained within channels as well as uncontained fluids such as air.
GS **streams**
. gas streams
RT air flow
alluvium
aquifers
Delaware River Basin (US)
fluid flow
gas flow
hydrology
hydrology models
International Hydrological Decade
Lake Erie
Lake Huron
Lake Michigan
Lake Ontario
Lake Superior
limnology
meanders
rapids
reservoirs
rivers
stream functions (fluids)
surface water
Susquehanna River Basin (MD-NY-PA)
wadis

streets
RT highways
intersections
pavements
roads
∞ tunnels
urban planning
urban research

∞ **strength**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cold strength
compressive strength
creep rupture strength
creep strength
dispersion strengthening
electric field strength
fiber strength
field strength
flexural strength
fracture strength
high strength
impact strength
load carrying capacity
mechanical properties
microyield strength
muscular strength
notch strength
residual strength
shear strength
tensile strength
weld strength
yield strength

strength of materials
USE **mechanical properties**

streptococcus
GS microorganisms
. bacteria
. . **streptococcus**

streptomycetes
GS microorganisms
. bacteria
. . **streptomycetes**

streptomycin
GS drugs
. antibiotics
. . **streptomycin**

stress (biology)
DEF The effect of a physiological, psychological, or mental load on a biological organism which causes fatigue and tends to degrade proficiency.
GS **stress (biology)**
. acceleration stresses (physiology)
. . centrifuging stress
. flight stress (biology)
. . space flight stress
. plant stress
. stress (psychology)
RT acclimatization
anxiety
deprivation
exercise physiology
fatigue (biology)
pathological effects
psychological effects

stress (physiology)
GS **stress (physiology)**
. acceleration stresses (physiology)
. . centrifuging stress
RT acceleration (physics)
acclimatization
aeroembolism
angina pectoris
anoxia
biodynamics
deprivation
exercise physiology
fatigue (biology)
flight stress (biology)
gravitational physiology
homeostasis
hyperkinesia
hypoxia
lower body negative pressure
muscular fatigue
Palmar sweat index
physiology
pressure breathing
space flight stress
stress (psychology)
underwater physiology

stress (psychology)
UF *mental stress*
GS stress (biology)
. **stress (psychology)**
RT fatigue (biology)
flight stress (biology)
mental performance
Palmar sweat index
psychological effects
psychological factors
psychology
space flight stress
space psychology
stress (physiology)
workloads (psychophysiology)

stress analysis
UF *stress calculations*
GS **stress analysis**
. boundary element method
. Schwartz method
. x ray stress analysis
RT Airy function
∞ analyzing
bending moments
bending theory
Castigliano variational theorem
combined stress
construction
creep analysis
Donnell equations
energy methods
Euler buckling
∞ flight stress
fringe multiplication
inelastic stress
influence coefficient
interference fit
isoparametric finite elements
mechanical engineering
Michell theorem
Moire fringes
moments of inertia
NASTRAN

photoelastic analysis
photoelasticity
Reissner theory
Saint Venant principle
shallow shell equations
S–N diagrams
stresses
structural analysis
structural design
structural engineering
temperature inversions

stress calculations
USE **stress analysis**

stress concentration
DEF In structures, a localized area of high stress.
GS distribution (property)
. stress distribution
. . **stress concentration**
RT combined stress
concentrating
crack initiation
cracking (fracturing)
Elber equation
fatigue (materials)
fatigue tests
force distribution
fringe multiplication
hole distribution (mechanics)
hole geometry (mechanics)
impact strength
impact tests
loads (forces)
mechanical properties
micromechanics
Moire fringes
moment distribution
notch strength
notch tests
perforated plates
perforated shells
plane stress
Saint Venant principle
strain distribution
stresses
stress–strain relationships
structural strain

stress corrosion
GS corrosion
. **stress corrosion**
. . stress corrosion cracking
RT cracking (fracturing)
fretting corrosion
intergranular corrosion
metal fatigue
salt spray tests
transgranular corrosion

stress corrosion cracking
GS corrosion
. stress corrosion
. . **stress corrosion cracking**
fracturing
. cracking (fracturing)
. . **stress corrosion cracking**
RT corrosion tests
crack closure
crack initiation
crack propagation
metal fatigue

stress cycles
DEF A variation of stress with time, repeated periodically and identically.
GS cycles
. **stress cycles**
mechanical properties
. **stress cycles**
RT cyclic loads
Elber equation
fatigue (materials)
fatigue life
fatigue tests
S–N diagrams
stresses
variable amplitude loading

stress distribution
UF *stress fields*
GS distribution (property)
. **stress distribution**
. . stress concentration
RT crack propagation
force distribution
fracture mechanics
interlaminar stress
strain distribution
stress intensity factors
stress–strain relationships
transverse loads

stress fields
USE **stress distribution**

stress functions
UF *von Mises theory*
GS functions (mathematics)
. **stress functions**
RT fracturing

stress intensity factors
DEF Load–induced variables in tension, compression, and/or shear which are conducive to crack initiation and propagation and fatigue fracture in materials.
RT bending theory
combined stress
crack initiation
crack propagation
cracking (fracturing)
edge cracks
force distribution
fracture mechanics
hole geometry (mechanics)
loads (forces)
notch strength
plane strain
stress distribution
tensile stress

stress measurement
GS mechanical measurement
. **stress measurement**
. . x ray stress measurement
RT deformeters
extensometers
photoelastic analysis
shearography
S–N diagrams
strain gages
tensometers
vibration measurement

stress propagation
GS transmission
. **stress propagation**
RT elastic waves
plastic deformation
∞ propagation

stress ratio
DEF The ratio of the minimum stress to the maximum stress occurring in one stress cycle.
GS mechanical properties
. **stress ratio**
ratios
. **stress ratio**
RT fatigue (materials)
fatigue tests
modular ratios
pressure ratio
S–N diagrams

stress relaxation
DEF The decrease in stress after a given time at constant strain.
GS mechanical properties
. **stress relaxation**
relaxation (mechanics)
. **stress relaxation**
RT anelasticity
Bordoni peaks
creep analysis
creep diagrams
creep properties
ductility
fatigue (materials)
plastic deformation
plastic flow
plastic memory
plastic properties
∞ recovery
residual stress
shear properties
strain energy release rate
stresses
temperature inversions

stress relieving
GS heat treatment
. **stress relieving**
relieving
. **stress relieving**
RT alloys
annealing
fatigue (materials)
∞ recovery
residual stress
stabilization
strain hardening
tempering

stress rupture strength
USE **creep rupture strength**

stress tensors
DEF Complete sets of stress components in a solid or fluid medium.
GS algebra
. tensors
. . **stress tensors**
RT continuum mechanics
elastic properties
fracture mechanics
plastic properties
structural design

stress waves
GS elastic waves
. **stress waves**
RT acoustic emission
shock layers
shock waves
stresses
temperature inversions
wave propagation
∞ waves

stress–strain diagrams
GS diagrams
. **stress–strain diagrams**
RT axial strain
Hookes law
inelastic stress
modulus of elasticity
Poisson ratio
Portevin–le Chatelier effect
proportional limit
shape memory alloys
shear properties
strain measurement
structural strain
yield strength

stress–strain relationships
DEF Relationship between the stress or load on a structure, structural member, or a specimen, and the strain or deformation that follows.
RT elastic deformation
interlaminar stress
plane strain
plastic deformation
Portevin–le Chatelier effect
∞ relationships
residual stress
strain distribution
strain measurement
stress concentration
stress distribution
structural strain
yield strength

stress–strain–time relations
RT creep diagrams
Newtonian fluids
thermoviscoelasticity

stressed-skin structures
RT monocoque structures
skin (structural member)
spherical shells
∞ structures
thin walled shells

stresses
DEF The forces per unit area of a body that tends to produce a deformation.
GS **stresses**
. axial stress
. combined stress
. critical loading
. interlaminar stress
. photostresses
. plane stress
. residual stress
. Reynolds stress
. shear stress
. . torsional stress
. tensile stress
. thermal stresses
. triaxial stresses
. vibrational stress
RT buckling
cracks
creep properties
destruction
fatigue (materials)
∞ flight stress
impact
loads (forces)
mechanical properties
microyield strength
prestressing
rolling contact loads
shear properties
stress analysis
stress concentration
stress cycles
stress relaxation
stress waves
structural strain
temperature inversions
transverse loads
triboluminescence
x ray stress analysis
yield strength

stretch forming
RT bulging
cold working
∞ drawing
metal drawing
metal working
stretching

stretchers
GS medical equipment
. **stretchers**
RT first aid

stretching
UF *dilatation*
RT cold working
deep drawing
dilatational waves
distortion
∞ drawing
ductility
elastic deformation
elongation
metal working
plastic deformation
stretch forming
tempering
∞ tension
winding

striation
DEF A fracture surface marking consisting of a separation of the advancing crack front into separate fracture planes.
RT grooving
musculoskeletal system
riblets
shatter cones

string theory
SN (DOES NOT INCLUDE CLASSICAL STRING THEORY)
UF *superstring theory*
RT bosons
cosmology
field theory (physics)
gauge theory
grand unified theory
gravitation theory
particle theory
quantum chromodynamics
quantum theory
relativity
supersymmetry
theoretical physics
unified field theory

stringers
DEF Slender, lightweight, lengthwise fill–in structural members in a rocket body, or the like, serving to reinforce and give shape to the skin.
GS structural members
. **stringers**
RT longerons
reinforcement (structures)
structural stability

strings
RT assemblies
cordage

∞ **strip**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT airports
circuits
display devices
metal strips
ribbons
runways

strip mining
GS mining
. **strip mining**
RT clays
coal
Earth resources
excavation
exploitation
lunar mining
mineral deposits
mines (excavations)
soils

strip transmission lines
GS transmission lines
. **strip transmission lines**
. . microstrip transmission lines
RT antenna feeds
metal strips
transmission circuits

∞ **stripping**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT anodic stripping
ion stripping
paint removal
peeling
stripping (distillation)

stripping (distillation)
GS distillation
. **stripping (distillation)**
RT ∞ separation
∞ stripping
vaporizing

stroboscopes
GS optical equipment
. **stroboscopes**
RT ballistic cameras
high speed cameras
optical measurement
synchronism
time measurement
velocity measurement

stroke volume
(added March 1991)
GS output
. cardiac output
. . **stroke volume**
RT blood volume
cardiovascular system
heart function
heart rate
physiological tests

∞ **strokes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT cerebral vascular accidents
thermodynamic cycles

stroking tests
GS vibration tests
. damping tests
. . **stroking tests**
RT dynamic response
frequency response
modal response
shock spectra
structural vibration
∞ tests
transient response
wave excitation

strong interactions (field theory)
DEF One of the fundamental interactions of elementary particles, primarily responsible for nuclear forces and other interactions among hadrons.
GS particle interactions
. elementary particle interactions
. . high energy interactions
. . . **strong interactions (field theory)**
RT field theory (physics)
grand unified theory
∞ interactions
nuclear interactions
nuclear reactions
quantum chromodynamics
standard model (particle physics)
∞ theories
weak interactions (field theory)

strongly coupled plasmas
DEF Highly compressed and collisional plasmas with electron densities of order 10 to the 24th power per cubic centimeter or more. The mean kinetic and potential energies of particles in the plasma are typically of the same order of magnitude.
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . collisional plasmas
. . . . . **strongly coupled plasmas**
. . . . dense plasmas
. . . . . **strongly coupled plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . collisional plasmas
. . . . . **strongly coupled plasmas**
. . . . dense plasmas
. . . . . **strongly coupled plasmas**
RT controlled fusion
cosmic plasma
coupled modes
high temperature plasmas
inertial confinement fusion
magnetohydrodynamic stability
plasma compression
plasma conductivity
plasma density
plasma equilibrium
plasma focus

strontium
GS chemical elements
. **strontium**
. . strontium isotopes
. . . strontium 85
. . . strontium 87
. . . strontium 89
. . . strontium 90
metals
. **strontium**
. . strontium isotopes
. . . strontium 85
. . . strontium 87
. . . strontium 89
. . . strontium 90

strontium 85
GS chemical elements
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . **strontium 85**
. . . strontium isotopes
. . . . **strontium 85**
. strontium
. . strontium isotopes
. . . **strontium 85**
metals
. strontium
. . strontium isotopes
. . . **strontium 85**

strontium 87
GS chemical elements
. nuclides
. . isotopes
. . . strontium isotopes
. . . . **strontium 87**
. strontium
. . strontium isotopes
. . . **strontium 87**
metals
. strontium
. . strontium isotopes
. . . **strontium 87**

strontium 88
GS chemical elements
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . **strontium 88**

strontium 89
GS chemical elements
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . **strontium 89**
. . . strontium isotopes
. . . . **strontium 89**
. strontium
. . strontium isotopes
. . . **strontium 89**
metals
. strontium
. . strontium isotopes
. . . **strontium 89**

strontium 90
GS chemical elements
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . **strontium 90**
. . . strontium isotopes
. . . . **strontium 90**
. strontium
. . strontium isotopes
. . . **strontium 90**
metals
. strontium
. . strontium isotopes
. . . **strontium 90**

strontium bromides
GS halogen compounds
. bromine compounds
. . bromides
. . . **strontium bromides**
. halides
. . bromides
. . . **strontium bromides**
. . metal halides
. . . **strontium bromides**
strontium compounds
. **strontium bromides**

strontium compounds
GS **strontium compounds**
. strontium bromides
. strontium fluorides
. strontium oxides
. strontium sulfides
. strontium titanates
. strontium zirconates
RT ∞ alkaline earth compounds
∞ chemical compounds
∞ metal compounds

strontium fluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **strontium fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **strontium fluorides**
. . metal halides
. . . metal fluorides
. . . . **strontium fluorides**
strontium compounds
. **strontium fluorides**

strontium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **strontium isotopes**
. . . . strontium 85
. . . . strontium 87
. . . . strontium 89
. . . . strontium 90
. strontium
. . **strontium isotopes**
. . . strontium 85
. . . strontium 87
. . . strontium 89
. . . strontium 90
metals
. strontium
. . **strontium isotopes**
. . . strontium 85
. . . strontium 87
. . . strontium 89
. . . strontium 90

strontium oxides
(added June 1992)
GS chalcogenides
. oxides
. . metal oxides
. . . **strontium oxides**
strontium compounds
. **strontium oxides**
RT ∞ alkaline earth compounds
BSCCO superconductors
∞ chemical compounds
high temperature superconductors
∞ metal compounds
mixed oxides
superconductors (materials)

strontium sulfides
GS chalcogenides

. sulfides
. . inorganic sulfides
. . . **strontium sulfides**
strontium compounds
. **strontium sulfides**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **strontium sulfides**

strontium titanates
GS strontium compounds
. **strontium titanates**
titanium compounds
. titanates
. . **strontium titanates**

strontium zirconates
GS strontium compounds
. **strontium zirconates**
zirconium compounds
. zirconates
. . **strontium zirconates**

Strouhal number
DEF A nondimensional number occurring in the study of periodic or quasiperiodic variations in the wake of objects immersed in a fluid stream.
GS dimensionless numbers
. **Strouhal number**
ratios
. **Strouhal number**
RT backwash
buffeting
flow characteristics
flow distribution
flow stability
Froude number
oscillating flow
slipstreams
turbulence
unsteady flow
vortices
wakes

structural analysis
UF *membrane analogy*
membrane theory
GS **structural analysis**
. dynamic structural analysis
. . flutter analysis
. energy methods
. . Bernstein energy principle
. . strain energy methods
. equilibrium methods
. matrix methods
RT ∞ analyzing
Castigliano variational theorem
construction
continuum modeling
creep analysis
hole geometry (mechanics)
influence coefficient
J integral
loading moments
megamechanics
Michell theorem
modular ratios
moment distribution
NASTRAN
orbital space tests
patch tests
plate theory
shape functions
solid mechanics
stiffness matrix
stress analysis

structural basins
UF *basins*
closed basins
depressions (topography)
sinks (geology)
GS landforms
. **structural basins**
. . cirques (landforms)
. . Great Basin (US)
. . Kalahari Basin (Africa)
. . karst
. . . sinkholes
. . kettles (geology)
. . Lake Champlain Basin (NY–VT)
. . river basins
. . . Atchafalaya River Basin (LA)
. . . Chena River Basin (AK)
. . . Columbia River Basin (ID–OR–WA)
. . . Delaware River Basin (US)
. . . Feather River Basin (CA)
. . . Missouri River Basin (US)
. . . Susquehanna River Basin (MD–NY–PA)
. . . Wabash River Basin (IL–IN–OH)
. . . wadis
. . watersheds
. . Williston Basin (North America)
RT geology
seamounts
valleys

structural beams
USE **beams (supports)**

structural design
GS **structural design**
. pressure vessel design
RT aeroelastic research wings
aircraft design
airframe materials
architecture
breakwaters
computer aided design
construction
∞ design
helicopter design
lofting
missile design
plant design
product development
satellite design
ship hulls
shock spectra
space station structures
spacecraft design
spacecraft structures
stress analysis
stress tensors
substructures
underwater structures
weight reduction

structural design criteria
GS criteria
. **structural design criteria**
RT aerodynamic loads
axial compression loads
axial loads
bending moments
compression loads
cyclic loads
∞ design
dynamic loads
geotechnical engineering
gust loads
impact loads
landing loads
loads (forces)
mass distribution
moment distribution
pressure distribution
random loads
rolling contact loads
shock loads
static loads
thrust loads
transient loads
vibratory loads

structural dynamics
USE **dynamic structural analysis**

structural engineering
RT aeronautical engineering
aerospace engineering
construction
∞ engineering
geotechnical engineering
megamechanics
modular ratios
smart structures
stress analysis

structural failure
GS failure
. **structural failure**
RT bending
buckling
collapse
cracking (fracturing)
creep properties
deformation
fatigue (materials)
fracturing
load carrying capacity
mechanical properties
system failures

structural fatigue
USE **fatigue (materials)**

structural foundations
USE **foundations**

structural influence coefficients
UF *SIC (coefficient)*
GS coefficients
. influence coefficient
. . **structural influence coefficients**

structural materials
USE **construction materials**

structural members
GS **structural members**
. beams (supports)
. . box beams
. . cantilever beams
. . curved beams
. . I beams
. . rectangular beams
. . Timoshenko beams
. columns (supports)
. . tapered columns
. girders
. longerons
. membrane structures
. . skin (structural member)
. plates (structural members)
. . anisotropic plates
. . annular plates
. . cantilever plates
. . circular plates
. . corrugated plates
. . elastic plates

. . end plates
. . flat plates
. . girder webs
. . metal plates
. . . boiler plate
. . orthotropic plates
. . perforated plates
. . plastic plates
. . porous plates
. . rectangular plates
. . reinforced plates
. . thick plates
. . thin plates
. saddles (supports)
. strakes
. stringers
. struts
. trusses
. wing panels
RT aircraft construction materials
airframe materials
bars
∞ channels
∞ components
concretes
construction
∞ construction materials
fasteners
foundations
guy wires
joints (junctions)
masonry
pylon mounting
pylons
rectangular panels
reinforcement (structures)
rods
slabs
smart structures
stiffness matrix
∞ structures
substructures
thick walls

structural properties (geology)
UF *lineament*
GS geology
. **structural properties (geology)**
RT Earth core
Earth crust
Earth mantle
Earth planetary structure
Earth surface
fissures (geology)
geophysics
Great Basin (US)
hydrology
inliers (landforms)
landforms
planetary composition
plates (tectonics)
∞ properties
rock mechanics
shatter cones
sinkholes
subduction (geology)

structural reliability
GS reliability
. **structural reliability**
RT aircraft reliability
component reliability
cumulative damage
quality control

structural rigidity
USE **structural stability**

structural stability
UF *structural rigidity*
GS mechanical properties
. dimensional stability
. . **structural stability**
. . . shell stability
stability
. static stability
. . dimensional stability
. . . **structural stability**
. . . . shell stability
RT aircraft stability
combustion vibration
hybrid structures
load carrying capacity
longerons
plastic properties
reinforcement (structures)
resonance testing
∞ rigidity
rotor stator interactions
stiffness
stringers
wave resistance

structural strain
RT axial strain
bending
buckling
cracking (fracturing)
deflection
deformation
elastic deformation
failure
load carrying capacity
moments of inertia
plastic deformation
prestressing
reinforcement (structures)
rupturing
shear strain
shearing
strain measurement
stress concentration
stresses
stress–strain diagrams
stress–strain relationships
system failures
temperature inversions
twisting
volumetric strain
warpage

structural vibration
GS vibration
. **structural vibration**
. . bending vibration
. . breathing vibration
. . flutter
. . . panel flutter
. . . subsonic flutter
. . . supersonic flutter
. . . transonic flutter
. . linear vibration
. . missile vibration
. . self induced vibration
. . . panel flutter
. . . subsonic flutter
. . . supersonic flutter
. . . transonic flutter
. . torsional vibration
RT airfoil oscillations
earthquake resistant structures
flexible spacecraft
flutter analysis
gyrodampers
random vibration
resonant vibration
rotor dynamics
shaking
shock spectra
stroking tests
vibration tests

structural weight
GS weight (mass)
. **structural weight**
RT mass ratios
NEW MOONS project
weight analysis
weight reduction

structured grids (mathematics)
(added May 1995)
GS coordinates
. computational grids
. . **structured grids (mathematics)**
. . . multiblock grids
RT computational fluid dynamics
grid generation (mathematics)
∞ nets
smoothing
unstructured grids (mathematics)

structured programming
(added December 1989)
GS computer programming
. **structured programming**
RT computer aided design
computer programs
data structures
∞ programming
programming languages
software engineering

∞ **structures**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aircraft structures
architecture
atomic structure
breakwaters
bridges (structures)
composite structures
concrete structures
configuration interaction
crystal structure
Earth planetary structure
earthquake resistant structures
expandable structures
fine structure
folding structures
foundations
frames
galactic structure
honeycomb structures
hulls (structures)
hybrid structures
hyperfine structure
inflatable structures
intramolecular structures
isotensoid structures
large space structures
membrane structures
microstructure
missile structures
molecular structure
monocoque structures
planar structures
redundant components
rigid structures
ring structures
sandwich structures
smart structures

space erectable structures
space station structures
spacecraft structures
steel structures
stellar structure
stressed-skin structures
structural members
substructures
tanks (containers)
towers
trusses
unimolecular structures
variable geometry structures
welded structures
wooden structures

struts
GS structural members
. **struts**
RT chassis
columns (supports)
frames
pylons
supports
trusses

strychnine
GS bases (chemical)
. alkaloids
. . **strychnine**
nitrogen compounds
. alkaloids
. . **strychnine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . alkaloids
. . . . **strychnine**
poisons
. **strychnine**
RT stimulants

STS
USE **space transportation system**

STS-1
USE **Space Transportation System 1 flight**

STS-2
USE **Space Transportation System 2 flight**

STS-3
USE **Space Transportation System 3 flight**

STS-4
USE **Space Transportation System 4 flight**

students
UF *trainees*
RT education
instructors
learning
training evaluation
universities

studies
USE **investigation**

studs (structural members)
RT anchors (fasteners)
bolts
columns (supports)
fasteners
holders
lugs
pins
screws
walls

stunt flying
USE **aerobatics**

Sturm–Liouville operator
USE **Sturm–Liouville theory**

Sturm–Liouville theory
UF *Sturm–Liouville operator*
GS analysis (mathematics)
. real variables
. . **Sturm–Liouville theory**
RT differential equations
Lamb waves
Lame wave equations
∞ theories

styfuses
USE **pens**

styphnates
GS explosives
. **styphnates**
RT ∞ chemical compounds
∞ initiators
initiators (explosives)

styrenes
GS **styrenes**
. polystyrene
. . styrofoam (trademark)
RT Buna (trademark)

styrofoam (trademark)
GS plastics
. polystyrene
. . **styrofoam (trademark)**
styrenes
. polystyrene
. . **styrofoam (trademark)**
RT foams
∞ polymers

subarctic regions
GS Northern Hemisphere
. Arctic regions
. . **subarctic regions**
regions
. polar regions
. . Arctic regions
. . . **subarctic regions**
. remote regions
. . Arctic regions
. . . **subarctic regions**

subassemblies
DEF Assemblies that are component parts of larger assemblies. Used for subcircuits.
GS assemblies
. **subassemblies**
RT accessories
∞ components

subaudible frequencies
GS frequencies
. **subaudible frequencies**
range (extremes)
. frequency ranges
. . **subaudible frequencies**
RT acoustic frequencies
frequency distribution
harmonics
zero sound

subcarrier waves
USE **carrier waves**

subcircuits
USE **circuits**

subcontracts
DEF Any contracts, other than prime contracts, entered into by a prime contractor or subcontractor calling for supplies or services required for the performance of any one or more prime contracts.
GS contracts
. **subcontracts**
RT agreements
contract management
contract negotiation
contractors
estimates
grants
options
procurement

subcritical flow
DEF Open channel flow having a low velocity and a Founde number less than unity (also described as tranquil or streaming flow).
GS fluid flow
. **subcritical flow**
RT critical flow
flow characteristics
gas flow
liquid flow
multiphase flow
orifice flow
pipe flow
pressure gradients
single-phase flow
steady flow
steam flow
supercritical flow
turbulent flow
uniform flow
unsteady flow

subcritical mass
GS mass
. **subcritical mass**
RT critical mass
nuclear fission
nuclear reactions

subdivisions
RT ∞ division
∞ groups
∞ sections
set theory
subgroups
subsidiaries

subduction (geology)
DEF Descent of one tectonic unit under another. Most commonly used for descent of a slab of lithosphere, but appropriate at any scale.
GS geology
. **subduction (geology)**
RT Earth mantle
earthquakes
lithosphere
plates (tectonics)
seismology
structural properties (geology)
tectonics

subdwarf stars
GS celestial bodies
. stars
. . **subdwarf stars**
RT dwarf stars
main sequence stars
red dwarf stars

white dwarf stars

subgiant stars
DEF Celestial bodies whose position on the Hertzsprung–Russell (H–R) diagram is intermediate between that of the main–sequence stars and normal giants of the same spectral type.
GS celestial bodies
. stars
. . **subgiant stars**
RT carbon stars
dwarf stars
giant stars
late stars
M stars
main sequence stars
stellar evolution
supergiant stars

subgravity
USE **microgravity**

subgroups
UF *sublattices*
GS algebra
. group theory
. . homomorphisms
. . . **subgroups**
RT matrices (mathematics)
number theory
probability theory
set theory
subdivisions
subsidiaries

subharmonic generators
RT damping
∞ generators
harmonic generators
harmonic oscillators
harmonics
oscillators
signal generators
stimulated emission devices

SUBIC project
USE **Submarine Integrated Control project**

subjects
GS classifications
. **subjects**
RT handbooks
information retrieval
textbooks

sublattices
USE **lattices (mathematics)**
subgroups

sublayers
USE **substrates**

sublethal dosage
GS dosage
. **sublethal dosage**
RT drugs

sublimation
DEF The transition of a substance directly from the solid state to the vapor state, or vice versa, without passing through the intermediate liquid state.
GS phase transformations
. vaporizing
. . **sublimation**
RT ablation
beneficiation
condensing
crystallization
desorption
diffusion
evaporation
gas–metal interactions
gas–solid interfaces
phase change materials
purification
pyrometallurgy
refining
∞ separation
vapor pressure

subliminal stimuli
RT psychology
sensory stimulation
∞ stimuli

submarine cables
GS transmission lines
. **submarine cables**
RT ∞ cables
coaxial cables
communication cables
power lines

Submarine Integrated Control project
UF *SUBIC project*
GS programs
. projects
. . **Submarine Integrated Control project**
RT ∞ control

submarine propulsion
GS propulsion
. marine propulsion
. . underwater propulsion
. . . **submarine propulsion**

submarines
DEF Any self–powered underwater craft or towed underwater barges and arrays.
GS water vehicles
. ships
. . **submarines**
. . . ballistic missile submarines
. . . guided missile submarines
. . . trident submarine
. underwater vehicles
. . **submarines**
. . . ballistic missile submarines
. . . guided missile submarines
. . . trident submarine
RT antiship missiles
antiship warfare
antisubmarine warfare
∞ military vehicles
navy
nuclear powered ships
Seafarer project
ship hulls
submerged bodies

submerged bodies
GS **submerged bodies**
. diving (underwater)
. underwater research laboratories
RT submarines
torpedoes
towed bodies
underwater engineering
underwater photography
underwater structures
underwater vehicles
water immersion

submerging
UF *immersion*
RT baths
dipping
quenching (cooling)
sinking
∞ soaking
water immersion
weightlessness simulation
wetting

submersible aircraft
RT ∞ aircraft
antisubmarine warfare aircraft
light aircraft
∞ military aircraft
reconnaissance aircraft
research aircraft
water takeoff and landing aircraft

submillimeter waves
SN (BELOW 1 MILLIMETER)
GS electromagnetic radiation
. radio waves
. . short wave radiation
. . . **submillimeter waves**
RT beams (radiation)
electromagnetic noise
far infrared radiation
frequencies
Large Deployable Reflector
microwaves
millimeter waves
wavelengths

subminiaturization
GS miniaturization
. **subminiaturization**
RT electronic modules
microminiaturization
miniature electronic equipment
printed circuits

suborbital flight
RT ∞ flight
manned space flight
orbits
parabolic flight
rocket flight
space flight
weightlessness

subreflectors
RT Cassegrain antennas
conductors
reflector antennas
reflectors
scanners

Subroc missile
GS missiles
. ballistic missiles
. . **Subroc missile**
. surface to surface missiles
. . fleet ballistic missiles
. . . **Subroc missile**
. underwater to surface missiles
. . **Subroc missile**
RT underwater trajectories

subroutine libraries (computers)
GS computer programs
. computer systems programs
. . **subroutine libraries (computers)**
RT subroutines

subroutines
DEF A set of instructions necessary to direct a computer to carry out a well defined mathe-

matical or logical operation; a subunit of a routine, usually coded in such a manner that it can be treated as a black box by the routine using it.
GS computer programs
. **subroutines**
data conversion routines
. **subroutines**
RT compilers
parsing algorithms
subroutine libraries (computers)
user manuals (computer programs)

subsets (mathematics)
USE **set theory**

subsidence
RT isostasy
mines (excavations)
settling

subsidiaries
RT ∞ division
∞ sections
subdivisions
subgroups

∞ **subsonic aircraft**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ aircraft
flying platforms
general aviation aircraft
GETOL aircraft
gliders
ground effect machines
helicopters
jet aircraft
light aircraft
paragliders
passenger aircraft
rotary wing aircraft
short takeoff aircraft
supersonic aircraft
tandem wing aircraft
training aircraft
transport aircraft
turboprop aircraft
utility aircraft
vertical takeoff aircraft
water takeoff and landing aircraft

subsonic flow
DEF Flow of a fluid, as air over an airfoil, at speeds less than acoustic velocity.
GS fluid flow
. **subsonic flow**
RT aerodynamics
compressible flow
flow velocity
gas flow
incompressible flow
Karman vortex street
transonic flow

subsonic flutter
GS vibration
. structural vibration
. . flutter
. . . **subsonic flutter**
. . self induced vibration
. . . **subsonic flutter**
RT transonic flutter

subsonic speed
SN (LESS THAN MACH 1)
GS rates (per time)
. **subsonic speed**
velocity
. **subsonic speed**
RT acoustic velocity
low speed
transonic speed

subsonic wind tunnels
GS test facilities
. wind tunnels
. . low speed wind tunnels
. . . **subsonic wind tunnels**
RT blowdown wind tunnels
hypersonic wind tunnels
rectangular wind tunnels
supersonic wind tunnels
transonic wind tunnels

substances
USE **materials**

substitutes
UF *substitution*
RT alternatives
replacing
variations

substitution
USE **substitutes**

substrates
UF *sublayers*
GS strata
. **substrates**
RT coatings
laminates
∞ layers
metallizing
photomasks
plating
ply orientation
primers (coatings)

substructures
RT floors
foundations
structural design
structural members
∞ structures
supports
undercarriages
walls

subtraction
GS number theory
. **subtraction**
RT arithmetic
computation
Gaussian elimination

subtropical regions
USE **temperate regions**
tropical regions

suburban areas
RT cities
land use
megalopolises
regional planning
residential areas
rural areas

subzero temperature
GS temperature
. **subzero temperature**
RT absolute zero
atmospheric temperature
cold acclimatization
cold tolerance
cold weather

Success project
GS programs
. projects
. . **Success project**
weapon systems
. **Success project**

succinimides
GS nitrogen compounds
. amides
. . **succinimides**
. imides
. . **succinimides**

sucrose
GS organic compounds
. carbohydrates
. . sugars
. . . **sucrose**

suction
RT evacuating (vacuum)
pressure effects
pressure gradients
vacuum
vacuum apparatus
vacuum pumps

Sud Aviation aircraft
GS **Sud Aviation aircraft**
. Alouette helicopters
. . SA-330 helicopter
. . SE-3160 helicopter
. Concorde aircraft
. SA-321 helicopter
. SE-210 aircraft
RT ∞ aircraft

Sud Aviation SA-321 helicopter
USE **SA-321 helicopter**

Sud Aviation SA-330 helicopter
USE **SA-330 helicopter**

Sud Aviation SE-210 aircraft
USE **SE-210 aircraft**

Sud Aviation SE-3160 helicopter
USE **SE-3160 helicopter**

Sudan
GS nations
. **Sudan**
RT Africa

sudden enhancement of atmospherics
GS electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . atmospherics
. . . . **sudden enhancement of atmospherics**

sudden ionospheric disturbances
DEF Complex combinations of sudden changes in the conditions of the ionosphere and the effects of these changes. Used for geomagnetic crotchets and SID (ionospheric disturbances).
UF *geomagnetic crotchets*
SID (ionospheric disturbances)
GS ionospheric disturbances
. ionospheric storms
. . **sudden ionospheric disturbances**
storms
. ionospheric storms
. . **sudden ionospheric disturbances**
RT ∞ disturbances
magnetic disturbances
magnetic storms

solar activity effects
traveling ionospheric disturbances

sudden storm commencements
RT magnetic disturbances
magnetic storms
solar activity effects
solar corpuscular radiation
solar flares
storms

sugar beets
GS farm crops
. **sugar beets**
plants (botany)
. **sugar beets**
RT agriculture
botany
crop growth
crop vigor
Earth resources
farmlands
irrigation
seeds
sugars

sugar cane
GS farm crops
. **sugar cane**
plants (botany)
. **sugar cane**
RT agriculture
botany
crop growth
crop vigor
Earth resources
farmlands
∞ food
irrigation
seeds

sugars
GS organic compounds
. carbohydrates
. . **sugars**
. . . dextrans
. . . inositols
. . . lactose
. . . mannitol
. . . monosaccharides
. . . . hexoses
. . . . . galactose
. . . . . glucose
. . . . pentose
. . . . . ribose
. . . . . xylose
. . . sucrose
RT ∞ food
sugar beets

suggestion
GS recommendations
. **suggestion**
RT hypnosis

Suhl effect
RT carrier injection
∞ effects
electrons
excitons
holes (electron deficiencies)
magnetic fields
n-type semiconductors
recombination reactions

suitability
RT acceptability
compatibility

suits
GS clothing
. **suits**
. . pressure suits
. . . space suits
. . . . extravehicular mobility units
RT garments

Sukhoi aircraft
(added September 1995)
RT ∞ aircraft

sulfates
GS sulfur compounds
. **sulfates**
. . alum
. . ammonium sulfates
. . barite
. . hydroxylamine sulfate
. . lithium sulfates
. . magnesium sulfates
. . . hexahedrite
. . sodium sulfates
RT gypsum
sulfuric acid

sulfation
DEF The introduction into an organic molecule of the sulfuric ester group (or its salts) –O–SO3H, where the sulfur is linked through an oxygen atom to the parent molecule.
GS chemical reactions
. **sulfation**
RT hydrometallurgy
sulfidation

sulfidation
DEF The reaction of a metal or alloy with a sulfur-containing species to produce a sulfur compound that forms on or beneath the surface of the metal or alloy.
GS chemical reactions
. **sulfidation**
RT corrosion resistance
gas–metal interactions
heat resistant alloys
nickel alloys
sulfation
sulfides

sulfides
GS chalcogenides
. **sulfides**
. . disulfides
. . . carbon disulfide
. . inorganic sulfides
. . . barium sulfides
. . . bismuth sulfides
. . . cadmium sulfides
. . . calcium sulfides
. . . copper sulfides
. . . hydrogen sulfide
. . . indium sulfides
. . . lead sulfides
. . . molybdenum sulfides
. . . . molybdenum disulfides
. . . polysulfides
. . . strontium sulfides
. . . zinc sulfides
. . . . wurtzite
. . . . zincblende
. . pyrites
. . pyrrhotite
. . . troilite
sulfur compounds
. **sulfides**
. . disulfides
. . . carbon disulfide
. . inorganic sulfides
. . . barium sulfides
. . . bismuth sulfides
. . . cadmium sulfides
. . . calcium sulfides
. . . copper sulfides
. . . hydrogen sulfide
. . . indium sulfides
. . . lead sulfides
. . . molybdenum sulfides
. . . . molybdenum disulfides
. . . polysulfides
. . . strontium sulfides
. . . zinc sulfides
. . . . wurtzite
. . . . zincblende
. . pyrites
. . pyrrhotite
. . . troilite
RT sulfidation
thioplastics

sulfites
GS sulfur compounds
. **sulfites**
. . hydrosulfites
. . sodium sulfites

sulfonates
GS esters
. **sulfonates**
sulfur compounds
. **sulfonates**
RT ∞ salts

sulfones
GS sulfur compounds
. **sulfones**
RT sulfonic acid

sulfonic acid
GS acids
. **sulfonic acid**
RT sulfones
sulfur compounds

sulfur
GS chemical elements
. **sulfur**
. . sulfur isotopes

sulfur chlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . **sulfur chlorides**
. halides
. . chlorides
. . . **sulfur chlorides**
sulfur compounds
. **sulfur chlorides**

sulfur compounds
GS **sulfur compounds**
. organic sulfur compounds
. sulfates
. . alum
. . ammonium sulfates
. . barite
. . hydroxylamine sulfate
. . lithium sulfates
. . magnesium sulfates
. . . hexahedrite
. . sodium sulfates
. sulfides
. . disulfides
. . . carbon disulfide
. . inorganic sulfides

. . . barium sulfides
. . . bismuth sulfides
. . . cadmium sulfides
. . . calcium sulfides
. . . copper sulfides
. . . hydrogen sulfide
. . . indium sulfides
. . . lead sulfides
. . . molybdenum sulfides
. . . . molybdenum disulfides
. . . polysulfides
. . . strontium sulfides
. . . zinc sulfides
. . . . wurtzite
. . . . zincblende
. . pyrites
. . pyrrhotite
. . . troilite
. sulfites
. . hydrosulfites
. . sodium sulfites
. sulfonates
. sulfones
. sulfur chlorides
. sulfur fluorides
. . sulfur hexafluoride
. sulfur oxides
. . sulfur dioxides
. sulfuric acid
. thiazine (trademark)
. thiols
. . cysteine
. . dimercaprol
RT bloedite
∞ chemical compounds
Group 6A compounds
sulfonic acid

sulfur dioxides
GS chalcogenides
. oxides
. . dioxides
. . . **sulfur dioxides**
. sulfur oxides
. . . **sulfur dioxides**
sulfur compounds
. sulfur oxides
. . **sulfur dioxides**

sulfur fluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . **sulfur fluorides**
. . . . sulfur hexafluoride
. halides
. . fluorides
. . . **sulfur fluorides**
. . . . sulfur hexafluoride
sulfur compounds
. **sulfur fluorides**
. . sulfur hexafluoride

sulfur hexafluoride
(added September 1993)
GS **gases**
. **sulfur hexafluoride**
halogen compounds
. fluorine compounds
. . fluorides
. . . sulfur fluorides
. . . . **sulfur hexafluoride**
. halides
. . fluorides
. . . sulfur fluorides
. . . . **sulfur hexafluoride**
sulfur compounds
. sulfur fluorides
. . **sulfur hexafluoride**
RT∞ chemical compounds
dielectrics
infrared spectroscopy
laser materials
working fluids

sulfur isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **sulfur isotopes**
. sulfur
. . **sulfur isotopes**

sulfur oxides
GS chalcogenides
. oxides
. . **sulfur oxides**
. . . sulfur dioxides
sulfur compounds
. **sulfur oxides**
. . sulfur dioxides
RT acid rain
dioxides

sulfuric acid
GS acids
. **sulfuric acid**
sulfur compounds
. **sulfuric acid**
RT sulfates

sum rules
GS rules
. **sum rules**
RT sums

summaries
GS **summaries**
. abstracts
. prelaunch summaries
RT annotations
bibliographies
documentation
indexes (documentation)
information dissemination
postlaunch reports
reports

summer
GS seasons
. **summer**
RT autumn
hot weather
solstices
spring (season)
winter

sumps
RT drainage
pits (excavations)
waste disposal

sums
RT algebra
amount
arithmetic
computation
series (mathematics)
sum rules

sun
DEF The star at the center of the solar system, around which the planets, asteroids, and comets revolve. It is a G-type star. Used for solar disk.
UF *solar disk*
GS celestial bodies
. stars
. . G stars
. . . **sun**
. . main sequence stars
. . . **sun**
RT AOSO
ASTEC solar turboelectric generator
celestial mechanics
GRIST (telescope)
light sources
OSO
photosphere
planets
satellite solar energy conversion
satellite solar power stations
solar activity
solar activity effects
solar arrays
solar atmosphere
solar atriums
solar auxiliary power units
solar blankets
solar cells
solar collectors
solar compasses
solar constant
solar cooling
solar corona
solar corpuscular radiation
solar cosmic rays
solar cycles
solar eclipses
solar electric propulsion
solar electrons
solar energy
solar energy absorbers
solar energy conversion
solar flares
solar flux
solar flux density
solar furnaces
solar generators
solar granulation
solar gravitation
solar heating
solar houses
solar instruments
solar interior
solar limb
solar longitude
solar magnetic field
Solar Maximum Mission
Solar Maximum Mission-A
Solar Mesosphere Explorer
solar neighborhood
solar neutrinos
solar oblateness
solar observatories
solar orbits
solar oscillations
solar parallax
solar physics
solar ponds (heat storage)
solar position
solar power satellites
solar powered aircraft
solar probes
solar prominences
solar propulsion
solar protons
solar radar echoes
solar radiation

Solar Radiation 1 **satellite**
Solar Radiation 3 **satellite**
solar radiation shielding
solar radio bursts
solar reflectors
solar rotation
solar sails
solar sea power plants
solar sensors
solar simulation
solar simulators
solar spectra
solar spectrometers
solar storms
solar system
solar system evolution
solar temperature
solar terrestrial interactions
solar thermal propulsion
solar total energy systems
solar velocity
solar wind
solar wind velocity
solar x-rays
sunlight
Ulysses mission

sun sensors
USE **solar sensors**

Sunblazer space probe
GS unmanned spacecraft
. space probes
. . **solar probes**
. . . **Sunblazer space probe**
RT multistage rocket vehicles
solid propellant rocket engines

sunflowers
DEF Any of a number of tall related plants having yellow, daisylike flowers with yellow, brown, purple, or almost black disks containing seeds from which an oil is extracted.
GS farm crops
. **sunflowers**
plants (botany)
. **sunflowers**
RT agriculture
crop identification
∞ crops
Earth resources

sunglasses
RT eye protection
eyepieces
goggles
optical filters
visors

sunlight
GS electromagnetic radiation
. light (visible radiation)
. . **sunlight**
extraterrestrial radiation
. solar radiation
. . **sunlight**
RT black body radiation
circumsolar radiation
climatology
cloud cover
infrared radiation
insolation
sky
sky brightness
sky radiation
solar heating
sun
thermal radiation
ultraviolet radiation
Umkehr **effect**
zodiacal light

sunrise
DEF The crossing of the visible horizon by the upper limb of the ascending sun.
RT morning
∞ science
sunset
terminator lines

sunset
DEF The crossing of the visible horizon by the upper limb of the descending sun.
RT evening
∞ science
sunrise
terminator lines

sunspot cycle
DEF A cycle with an average length of 11.1 years but varying between 7 and 17 years in the number and area of sunspots, as given by the relative sunspot number. This number rises from a minimum of 0 to 10 to a maximum of 50 to 140 about 4 years later, and then declines more slowly.
GS cycles
. solar cycles
. . **sunspot cycle**
RT solar activity
starspots
stellar activity

sunspots
DEF Relatively dark areas on the surface of the sun consisting of dark central umbras surrounded by penumbras which are intermediate in brightness between the umbras and the surrounding photosphere.
GS stellar activity
. solar activity
. . **sunspots**
. starspots
. . **sunspots**
RT faculae
magnetic disturbances
photosphere
solar cycles
solar flares
solar terrestrial interactions
twenty-seven day variation

Super Sabre aircraft
USE **F-100 aircraft**

superalloys
USE **heat resistant alloys**

supercavitating flow
UF *supercavitation*
GS fluid flow
. turbulent flow
. . cavitation flow
. . . **supercavitating flow**
RT hydrofoil oscillations

supercavitation
USE **supercavitating flow**

superchargers
UF *supercharging*
turbochargers
GS compressors
. **superchargers**
RT air intakes
blowers
centrifugal compressors
compressing
internal combustion engines
turbocompressors
turbomachinery

supercharging
USE **superchargers**

SuperCobra
USE **AH-1W helicopter**

supercomputers
DEF Computers with very large capacity and very high speed.
GS data processing equipment
. computers
. . **supercomputers**
. . . Connection Machine
. . . Cray computers
RT architecture (computers)
hypercube multiprocessors
multiprocessing (computers)
parallel processing (computers)

superconducting cavity resonators
(added December 1992)
GS resonators
. cavity resonators
. . **superconducting cavity resonators**
superconducting devices
. **superconducting cavity resonators**
RT microwave oscillators
oscillators
superconducting films
superconducting magnets

superconducting devices
(added December 1992)
GS **superconducting devices**
. SIS (superconductors)
. squid (detectors)
. superconducting cavity resonators
. superconducting magnets
RT superconducting films
superconducting power transmission
superconducting super collider
tunnel junctions

superconducting films
(added April 1989)
RT BSCCO superconductors
∞ films
laser deposition
pulsed laser deposition
semiconducting films
superconducting cavity resonators
superconducting devices
superconductors (materials)
thick films
thin films
YBCO superconductors

superconducting magnets
GS magnets
. electromagnets
. . **superconducting magnets**
superconducting devices
. **superconducting magnets**
RT cryogenic magnets
flux pumps
high field magnets
high temperature superconductors
magnet coils
magnetic energy storage
superconducting cavity resonators
superconducting super collider

superconducting power transmission
RT ∞ conductivity

cryogenics
electric power transmission
high temperature superconductors
low temperature physics
power lines
superconducting devices
transition temperature
transmission lines

superconducting quantum interferometers
USE **squid (detectors)**

superconducting super collider
GS particle accelerators
. **superconducting super collider**
RT storage rings (particle accelerators)
superconducting devices
superconducting magnets

superconductivity
DEF A property of many elements, alloys, and compounds by virtue of which their electrical resistivity vanishes and they become strongly diamagnetic under appropriate conditions. Used for Meissner effect.
UF *Meissner effect*
GS electrical properties
. **electrical resistivity**
. . **superconductivity**
. . . Kondo effect
transport properties
. **electrical resistivity**
. . **superconductivity**
. . . Kondo effect
RT Abrikosov theory
BCS theory
Bloch band
∞ conductivity
cryogenics
cryotrons
electron phonon interactions
electron tunneling
flux pinning
flux pumps
gallium alloys
high temperature superconductors
Josephson junctions
Landau factor
Landau–Ginzburg equations
low temperature physics
∞ solid state physics
spin glass
transition temperature
trapped magnetic fields
vector currents
vortices
YBCO superconductors

superconductor insulator superconductors
USE **SIS (superconductors)**

superconductors (materials)
DEF Materials that exhibit superconductivity under appriate conditions.
GS conductors
. **superconductors (materials)**
. . high temperature superconductors
. . . BSCCO superconductors
. . . YBCO superconductors
. . organic superconductors
RT Abrikosov theory
carrier mobility
cryogenic computer storage
cryotrons
electron gas
energy storage
flux quantization
pinning
proximity effect (electricity)
solid state devices
squid (detectors)
strontium oxides
superconducting films
thermodynamic coupling

supercooling
GS cooling
. **supercooling**
. . cryogenic cooling
RT aging (metallurgy)
Aitken nuclei
condensing
convection clouds
crystallization
heat treatment
mechanical properties
nucleation
quenching (cooling)
supersaturation

supercritical airfoils
GS airfoils
. **supercritical airfoils**
. . supercritical wings
RT airfoil profiles

supercritical flow
GS fluid flow
. **supercritical flow**
RT critical flow
flow characteristics
gas flow
liquid flow
multiphase flow
orifice flow
pipe flow
pressure gradients
single-phase flow
steady flow
steam flow
subcritical flow
turbulent flow
unsteady flow

supercritical fluids
RT fluid mechanics
∞ fluids
solubility
supercritical pressures

supercritical pressures
GS pressure
. **supercritical pressures**
thermodynamic properties
. thermophysical properties
. . **supercritical pressures**
RT critical pressure
high pressure
liquid phases
supercritical fluids
vapor phases
vapor pressure

supercritical wings
GS airfoils
. supercritical airfoils
. . **supercritical wings**
. wings
. . **supercritical wings**
RT CL-600 challenger aircraft
spanloader aircraft
wing profiles
∞ winged vehicles

superfluid flow
USE **superfluidity**

superfluidity
UF *superfluid flow*
RT Bose–Einstein condensates
compressible fluids
∞ fluids
incompressible fluids
Kelvin–Helmholtz instability
liquid helium
liquid helium 2
many body problem
quantum statistics
two fluid models
viscosity
vortices

superfortress aircraft
USE **B-50 aircraft**

supergiant stars
GS celestial bodies
. **stars**
. . **supergiant stars**
. . . R Coronae Borealis stars
RT giant stars
K stars
M stars
massive stars
Mira variables
subgiant stars

supergravity
GS gravitation theory
. **supergravity**
RT broken symmetry
cosmology
field theory (physics)
gauge invariance
gauge theory
gravitinos
gravitons
group theory
lie groups
particle theory
quantum theory
relativity
supersymmetry
theoretical physics
unified field theory
Yang–Mills theory

superharmonics
GS harmonics
. **superharmonics**
RT cycles
frequencies
Mach number
supersonic wind tunnels
supersonics

superheating
GS heating
. **superheating**
RT steam

superheterodyne receivers
GS communication equipment
. radio receivers
. . **superheterodyne receivers**
radio equipment
. radio receivers
. . **superheterodyne receivers**
receivers
. radio receivers
. . **superheterodyne receivers**
RT beat frequencies

heterodyning

superhigh frequencies
SN (3 TO 30 GHZ)
UF *KU band*
S band
X band
GS **frequencies**
. radio frequencies
. . microwave frequencies
. . . **superhigh frequencies**
RT C band
centimeter waves
unified S band
VSAT (network)

superhybrid materials
DEF Composites of polymers, boron–aluminum, and titanium.
GS composite materials
. **superhybrid materials**
. . graphite–epoxy composites
RT boron–epoxy composites
carbon fiber reinforced plastics
fiber composites
hybrid composites
∞ materials
reinforcing fibers

superimposition (mathematics)
USE **superposition (mathematics)**

superlattices
DEF Crystals grown by depositing semiconductors in layers whose thickness is measured in atoms.
GS crystal lattices
. **superlattices**
semiconductors (materials)
. **superlattices**
RT crystal dislocations
crystal structure
gallium arsenides
lattice parameters

supermagnets
USE **high field magnets**

supermassive stars
DEF Stars with masses exceeding about 50 times that of the sun.
GS celestial bodies
. **stars**
. . **supermassive stars**
RT degenerate matter
massive stars
stellar models
stellar structure

supernova 1987A
GS celestial bodies
. **stars**
. . variable stars
. . . supernovae
. . . . **supernova 1987A**
RT Magellanic clouds

supernova remnants
RT black holes (astronomy)
neutron stars
North Polar Spur (astronomy)
pulsars
red dwarf stars
supernovae
white dwarf stars
white holes (astronomy)

supernovae
GS celestial bodies
. stars
. . variable stars
. . . **supernovae**
. . . . supernova 1987A
RT Crab nebula
gravitational collapse
nebulae
novae
Opik theory
Orion nebula
stellar mass
stellar mass ejection
stellar physics
supernova remnants

superoxides
USE **inorganic peroxides**

superplastic forming
(added July 1994)
UF *SPF (materials)*
RT bonding
elastoplasticity
metal working
plastic deformation
superplasticity

superplasticity
GS mechanical properties
. plastic properties
. . **superplasticity**
RT creep properties
crystal dislocations
elongation
eutectic alloys
heat resistant alloys
plastic deformation
plastic flow
superplastic forming

superposition (mathematics)
UF *superimposition (mathematics)*
RT equivalent circuits
linear circuits
∞ mathematics
∞ nets
network analysis
network synthesis

superpressure balloons
DEF Meteorological balloons consisting of nonextensible envelopes designed to withstand higher internal pressure differentials than external ones. Such balloons will maintain constant elevations until sufficient gas diffuses from them to cause a change in buoyancy. Used for constant volume balloons and tetroons.
UF *constant volume balloons*
tetroons
GS expandable structures
. inflatable structures
. . balloons
. . . high altitude balloons
. . . . **superpressure balloons**
RT balloon sounding
meteorological balloons

superrotation
DEF The generally more rapid relative motions found in the very tenuous regions of the atmosphere at heights around 300 km. The density of the atmosphere decreases rapidly with height and more than 95 percent of the mass of the atmosphere is contained within the troposphere and lower stratosphere. These regions of the atmosphere rotate faster on average than the underlying solid Earth.
GS gyration
. rotation
. . **superrotation**
RT atmospheric circulation
Earth atmosphere
Earth rotation
rotating fluids

supersaturation
RT condensing
crystallization
heat treatment
Mayer problem
precipitation (chemistry)
precipitation hardening
quenching (cooling)
solid solutions
supercooling

supersonic aircraft
SN (AIRCRAFT DESIGNED TO FLY AT SPEEDS ABOVE MACH 1 AND BELOW MACH 5)
UF *transonic aircraft*
GS **supersonic aircraft**
. A–5 aircraft
. B–58 aircraft
. B–70 aircraft
. Boeing 733 aircraft
. D–558 aircraft
. F–4 aircraft
. F–5 aircraft
. F–8 aircraft
. F–14 aircraft
. F–15 aircraft
. F–16 aircraft
. F–17 aircraft
. F–22 aircraft
. F–100 aircraft
. F–101 aircraft
. F–102 aircraft
. F–104 aircraft
. F–106 aircraft
. F–111 aircraft
. Firebee 2 target drone aircraft
. G–95/4 aircraft
. Jaguar aircraft
. MiG aircraft
. Mirage aircraft
. . Mirage 3 aircraft
. Nord 1500 aircraft
. P–1154 aircraft
. Saab 37 aircraft
. SR–71 aircraft
. supersonic transports
. . CL–823 aircraft
. . Concorde aircraft
. . L–2000 aircraft
. . supersonic commercial air transport
. . . Boeing 2707 aircraft
. . . TU–144 aircraft
. T–38 aircraft
. TSR–2 aircraft
. VJ–101 aircraft
. X–1 aircraft
. X–2 aircraft
. X–3 aircraft
. X–15 aircraft
RT ∞ aircraft
attack aircraft
fighter aircraft
hypersonic aircraft
jet aircraft
passenger aircraft
reconnaissance aircraft
research aircraft
∞ subsonic aircraft
supersonic cruise aircraft research

supersonics
sweptback wings
transport aircraft
trapezoidal tail surfaces
variable cycle engines
variable stream control engines

supersonic airfoils
GS airfoils
. **supersonic airfoils**
RT sweepback
sweptback tail surfaces
sweptback wings

supersonic boundary layers
GS boundary layers
. **supersonic boundary layers**
RT fluid flow
laminar boundary layer
supersonics
turbulent boundary layer
two dimensional boundary layer

supersonic combustion
GS combustion
. **supersonic combustion**
RT engines
fuel combustion

supersonic combustion ramjet engines
UF *scramjet engines*
scramjets
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . **supersonic combustion ramjet engines**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . **supersonic combustion ramjet engines**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . **supersonic combustion ramjet engines**
RT combustion
missiles
ramjet missiles
∞ SCRAM

supersonic commercial air transport
UF *SCAT*
GS commercial aircraft
. **supersonic commercial air transport**
. . Boeing 2707 aircraft
. . TU-144 aircraft
supersonic aircraft
. supersonic transports
. . **supersonic commercial air transport**
. . . Boeing 2707 aircraft
. . . TU-144 aircraft

supersonic compressors
DEF Compressors in which supersonic velocity is imparted to the fluid relative to the rotor blades, the stator blades, or to both the rotor and the stator blades, producing oblique shock waves over the blades to obtain a high pressure rise.
GS compressors
. **supersonic compressors**
RT oblique shock waves
transonic compressors
turbocompressors

supersonic cruise aircraft research
UF *SCAR program*
GS programs
. NASA programs
. . **supersonic cruise aircraft research**
RT ∞ aircraft
supersonic aircraft
supersonic transports

supersonic diffusers
DEF Diffusers designed to reduce the velocity and increase the pressure of fluid moving at supersonic velocities.
RT air intakes
∞ diffusers
exhaust diffusers
flow stability
vaneless diffusers

supersonic drag
GS aerodynamic characteristics
. aerodynamic drag
. . **supersonic drag**
aerodynamic forces
. aerodynamic drag
. . **supersonic drag**
dynamic characteristics
. drag
. . friction drag
. . . aerodynamic drag
. . . . **supersonic drag**
. . pressure drag
. . . **supersonic drag**
friction
. flow resistance
. . friction drag
. . . aerodynamic drag
. . . . **supersonic drag**
. skin friction
. . friction drag
. . . aerodynamic drag
. . . . **supersonic drag**
RT interference drag
wave drag

supersonic flight
RT caustic lines
∞ flight
hypersonic flight
jet lag
Mach cones
missiles
rocket flight
sonic booms
supersonics
transonic flight

supersonic flow
DEF In aerodynamics, flow of a fluid over a body at speeds greater than the acoustic velocity and in which the shock waves start at the surface of the body.
GS fluid flow
. **supersonic flow**
. . supersonic jet flow
RT aerodynamics
compressibility effects
compressible flow
flow velocity
gas flow
hypersonic flow
hypervelocity flow
Mach cones
Prandtl-Meyer expansion
secondary injection
shock waves
transonic flow
wedge flow
wind tunnels

supersonic flow inlets
USE **supersonic inlets**

supersonic flutter
GS vibration
. structural vibration
. . flutter
. . . **supersonic flutter**
. . self induced vibration
. . . **supersonic flutter**
RT missile vibration
transonic flutter

supersonic heat transfer
GS transmission
. heat transmission
. . heat transfer
. . . aerodynamic heat transfer
. . . . **supersonic heat transfer**
RT hypersonic heat transfer
supersonics

supersonic inlets
UF *supersonic flow inlets*
transonic inlets
GS intake systems
. air intakes
. . **supersonic inlets**
RT bypass ratio
hypersonic inlets
inlet airframe configurations
inlet flow
internal compression inlets
nose inlets
side inlets

supersonic jet flow
GS fluid flow
. jet flow
. . **supersonic jet flow**
. supersonic flow
. . **supersonic jet flow**
RT gas flow
. nozzle flow

supersonic low altitude missile
UF *SLAM*
GS missiles
. ramjet missiles
. . **supersonic low altitude missile**
. surface to surface missiles
. . **supersonic low altitude missile**
RT nuclear ramjet engines
Pluto reactors
ramjet engines

supersonic nozzles
DEF Converging diverging nozzles designed to accelerate a fluid to supersonic speed
RT coaxial nozzles
conical nozzles
convergent-divergent nozzles
hypersonic nozzles
∞ nozzles
rocket nozzles
sonic nozzles
transonic nozzles
variable stream control engines
wind tunnel nozzles

supersonic speed
SN (BETWEEN MACH 1 AND 4.9)
GS rates (per time)
. **supersonic speed**
velocity
. **supersonic speed**
RT acoustic velocity
high speed
hypersonic speed
hypersonics
supersonics
transonic speed

supersonic test apparatus
RT hypersonic test apparatus
supersonics
∞ **test equipment**
wind tunnel apparatus

supersonic transports
GS supersonic aircraft
. **supersonic transports**
. . CL-823 aircraft
. . Concorde aircraft
. . L-2000 aircraft
. . supersonic commercial air transport
. . . Boeing 2707 aircraft
. . . TU-144 aircraft
RT cargo aircraft
commercial aircraft
passenger aircraft
supersonic cruise aircraft research

supersonic turbines
UF *transonic turbines*
GS turbomachinery
. turbines
. . **supersonic turbines**
RT gas turbine engines
gas turbines
rotor/stator interactions

supersonic wakes
GS **wakes**
. **supersonic wakes**
RT aircraft wakes
hypersonic wakes

supersonic wind tunnels
GS test facilities
. wind tunnels
. . **supersonic wind tunnels**
RT blowdown wind tunnels
hypersonic wind tunnels
hypervelocity wind tunnels
low density wind tunnels
shock tunnels
slotted wind tunnels
subsonic wind tunnels
superharmonics
transonic wind tunnels

supersonics
DEF Specifically, the study of aerodynamics of supersonic speeds.
GS fluid mechanics
. fluid dynamics
. . **gas dynamics**
. . . **aerodynamics**
. . . . **supersonics**
RT aerothermodynamics
hypersonics
Mach cones
superharmonics
supersonic aircraft
supersonic boundary layers
supersonic flight
supersonic heat transfer
supersonic speed
supersonic test apparatus

superstring theory
USE **string theory**

supersymmetry
GS symmetry
. **supersymmetry**
RT bosons
broken symmetry
cosmology
fermions
field theory (physics)
gauge theory
grand unified theory
gravitation theory
group theory
. lie groups
particle theory
quantum theory
string theory
supergravity
theoretical physics
unified field theory

supine position
RT acceleration protection
prone position
rest
sitting position

supplements
GS documents
. **supplements**
RT contracts
extensions
indexes (documentation)
motion pictures
records
reports

supplying
RT commerce
consumption
demand (economics)
filling
injection
input
marketing
output

support interference
RT antenna radiation patterns
∞ interference
supports
vibration effects

support systems
GS **support systems**
. ground operational support system
. ground support systems
. life support systems
. . biopaks
. . closed ecological systems
. . emergency life sustaining systems
. . . AEPS
. . portable life support systems
. . . AEPS
. . . IMLSS
. decision support systems
. pilot support systems
RT self sealing
services
∞ **systems**

supports
UF *mounts*
stands
GS **supports**
. pylons
. saddles (supports)
. tripods
RT bearings
carriages
chassis
foundations
frames
gimbals
∞ headers
lugs
pivots
∞ platforms
pylon mounting
racks (frames)
reinforcement (structures)
shafts (machine elements)
struts
substructures
support interference
∞ sustaining
trusses

suppression
USE **retarding**

suppressors
GS **suppressors**
. echo suppressors
RT absorbers (materials)
additives
attenuators
baffles
circuit protection
damping
infrared suppression
inhibitors
insulation
isolators
mufflers
neutralizers
noise reduction
retardants
shielding
silencers
squelch circuits

surface acoustic wave devices
UF *S-A-W devices*
RT acoustic delay lines
bulk acoustic wave devices
∞ devices
electroacoustic transducers
electroacoustics
interdigital transducers
microsonics
signal processing
sound waves
ultrasonic wave transducers

surface cooling
GS cooling
. **surface cooling**
RT convective heat transfer
evaporative cooling
film cooling
radiant cooling
radiative heat transfer
∞ surfaces
sweat cooling
temperature

surface cracks
UF *crazing*
GS fractures (materials)
. cracks

. . **surface cracks**
surface properties
. **surface cracks**
RT crack closure
crack geometry
crack initiation
crack propagation
edge cracks
microcracks
solid surfaces
∞ surfaces

surface defects
GS defects
. **surface defects**
surface properties
. **surface defects**
RT caustics (optics)
crack initiation
crystal defects
crystal dislocations
fatigue (materials)
mechanical properties
point defects
∞ surfaces

surface diffusion
GS diffusion
. **surface diffusion**
RT molecular diffusion
∞ surfaces
thermal diffusion

surface distortion
GS distortion
. **surface distortion**
RT ∞ surface geometry
∞ surfaces
warpage

surface effect ships
DEF Vessels using ground effect principle and having submerged rigid sidewalls (sealants). Used for SES.
UF *SES*
GS surface vehicles
. **surface effect ships**
water vehicles
. ships
. . **surface effect ships**
RT captured air bubble vehicles
∞ effects
research vehicles
∞ surfaces
SWATH (ship)
∞ vehicles

surface emitting lasers
(added March 1992)
GS stimulated emission devices
. lasers
. . **surface emitting lasers**
RT laser arrays
lasing
light emitting diodes
semiconductor lasers
solid state lasers
stimulated emission
waveguide lasers

surface energy
GS surface properties
. **surface energy**
thermodynamic properties
. **surface energy**
RT activation energy
electron energy
∞ energy
interfacial energy
interfacial tension
proton energy
∞ surfaces
thermophysical properties

surface finishing
GS surface treatment
. **surface finishing**
RT cleaning
coating
coatings
corrosion prevention
corrosion resistance
electroplating
electropolishing
finishes
machining
metal finishing
metal grinding
metal polishing
metal spraying
metal surfaces
micromachining
polishing
protective coatings
shot peening
solid surfaces
sputtering
∞ surfaces
wear

∞ **surface geometry**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT concavity
convexity
Cosserat surfaces
flat surfaces
flatness
geometry
Lambert surface
lofting
planforms
shapes
surface distortion
surface layers
surface properties
surface reactions
surface roughness
surface stability
∞ surfaces

surface interactions
USE **surface reactions**

surface ionization
GS ionization
. **surface ionization**
RT ionizers
∞ surfaces

surface layers
RT atmospheric stratification
barrier layers
boundary layer thickness
boundary layers
crystal surfaces
∞ layers
lunar surface
monomolecular films
oxide films
solar granulation
∞ surface geometry
surface treatment
∞ surfaces
thermoclines
∞ transition layers

surface navigation
UF *marine navigation*
GS navigation
. **surface navigation**
RT celestial navigation
dead reckoning
Decca navigation
digital navigation
hyperbolic navigation
inertial navigation
LORAC navigation system
loran
nautical charts
navigation aids
radar navigation
radio navigation
ships
∞ surfaces

surface noise interactions
RT acoustic excitation
acoustic scattering
aeroacoustics
aerodynamic noise
rotor stator interactions
turbulence

surface pressure
USE **pressure**

surface properties
UF *Bardeen approximation*
GS **surface properties**
. adhesion
. adsorptivity
. coefficient of friction
. interfacial tension
. spectral reflectance
. surface cracks
. surface defects
. surface energy
. surface roughness
. surface stability
. surface temperature
. . land surface temperature
. . sea surface temperature
. . skin temperature (non-biological)
. . wall temperature
RT absorptance
albedo
atomic force microscopy
bidirectional reflectance
coarseness
coating
coatings
color
contact potentials
contact resistance
corrosion
Cosserat surfaces
diffusion
efflorescence
emissivity
evanescence
finishes
flat surfaces
foaming
friction
hardness
hot corrosion
interfaces
Jupiter red spot
lunar albedo
lunar surface

lunar topography
mechanical properties
metal surfaces
optical properties
permeability
∞ physical properties
planar structures
planetary surfaces
profilometers
∞ properties
reflectance
roughness
selenography
solid surfaces
solid–solid interfaces
sorption
∞ surface geometry
surface tension driven convection
surface treatment
∞ surfaces
textures
viscosity
void ratio
wettability

surface reactions
UF *surface interactions*
RT chemical reactions
erosion
fluid–solid interactions
gas–liquid interactions
interfaces
metal surfaces
metal–water reactions
spacecraft glow
∞ surface geometry
∞ surfaces
surfactants
vaporizing

surface roughness
DEF The deviation of the topography of an actual surface from an ideal atomically smooth and planar surface.
GS roughness
. **surface roughness**
surface properties
. **surface roughness**
RT coarseness
friction
lunar topography
machining
mechanical properties
profilometers
runway conditions
∞ surface geometry
∞ surfaces
topography

surface roughness effects
RT ∞ effects
friction drag
reflectance
separated flow
speckle patterns
∞ surfaces

surface stability
GS stability
. **surface stability**
surface properties
. **surface stability**
RT coarseness
dynamic stability
interfacial tension
motion stability
static stability
storage stability
∞ surface geometry
∞ surfaces
thermal stability

surface temperature
GS surface properties
. **surface temperature**
. . land surface temperature
. . sea surface temperature
. . skin temperature (non–biological)
. . wall temperature
temperature
. **surface temperature**
. . land surface temperature
. . sea surface temperature
. . skin temperature (non–biological)
. . wall temperature
RT coarseness
geothermal anomalies
ocean temperature
∞ surfaces
thermoclines
water temperature

surface tension
USE **interfacial tension**

surface tension driven convection
(added December 1995)
GS convection
. **surface tension driven convection**
RT capillary flow
convective flow
interfacial tension
∞ microgravity applications
oscillating flow
surface properties

surface to air missiles
UF *ground–to–air missiles*
GS missiles
. **surface to air missiles**
. . Blue Goose missile
. . BOMARC missiles
. . . BOMARC A missile
. . . BOMARC B missile
. . Chaparral missile
. . Hawk missile
. . Mauler missile
. . Nike missiles
. . . Nike–Ajax missile
. . . Nike–Hercules missile
. . . Nike–Zeus missile
. . Patriot missile
. . Redeye missile
. . Sprint missile
. . Talos missile
. . tartar missile
. . terrier missile
RT air to air missiles
air to surface missiles
antiaircraft missiles
antimissile missiles
Nike X systems
ramjet missiles
∞ rockets
Sentinel system
space weapons
Spartan missile
∞ surfaces

surface to surface missiles
GS missiles
. **surface to surface missiles**
. . antitank missiles
. . . Shillelagh missiles
. . . tow missiles
. . Corporal missile
. . cruise missiles
. . . Navaho missile
. . . Tomahawk missiles
. . fleet ballistic missiles
. . . Polaris A1 missile
. . . Polaris A2 missile
. . . Polaris A3 missile
. . . Poseidon missiles
. . . Subroc missile
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
. . . Minuteman ICBM
. . . MX missile
. . . Titan ICBM
. . . . Titan 1 ICBM
. . . . Titan 2 ICBM
. . intermediate range ballistic missiles
. . . Blue Streak missile
. . . Jupiter missile
. . . polaris missiles
. . . . Polaris A1 missile
. . . . Polaris A2 missile
. . . . Polaris A3 missile
. . Lance missile
. . Mace missiles
. . Pershing missile
. . Regulus missile
. . sergeant missiles
. . short range ballistic missiles
. . supersonic low altitude missile
. . V–1 missile
RT air to surface missiles
ballistic missiles
Harpoon missile
ramjet missiles
∞ rockets
∞ surfaces

surface to surface rockets
GS rocket vehicles
. **surface to surface rockets**
. . Honest John rocket vehicle
. . Little John rocket vehicle
RT ∞ rockets
∞ surfaces

surface treatment
(added April 1990)
GS **surface treatment**
. surface finishing
RT anodizing
coating
corrosion prevention
paint removal
surface layers
surface properties
∞ treatment

surface vehicles
GS **surface vehicles**
. aircraft carriers
. automated transit vehicles
. . automated guideway transit vehicles
. boats
. . lifeboats
. captured air bubble vehicles
. cargo ships
. . Savannah nuclear ship
. . tanker ships
. dollies
. electric hybrid vehicles
. lunar surface vehicles
. . lunar mobile laboratories

. . lunar roving vehicles
. . . Lunokhod lunar roving vehicles
. . . manned lunar surface vehicles
. magnetic levitation vehicles
. motor vehicles
. . automated mixed traffic vehicles
. . automobiles
. . . electric automobiles
. . electric motor vehicles
. . . electric automobiles
. . tractors
. . . crawler tractors
. . tracked vehicles
. . trucks
. . . tank trucks
. nuclear powered ships
. . Savannah nuclear ship
. roadway powered vehicles
. roving vehicles
. . lunar roving vehicles
. . . Lunokhod lunar roving vehicles
. . . manned lunar surface vehicles
. . Marsokhod Mars roving vehicles
. satellite communications ships
. sleds
. . rocket propelled sleds
. surface effect ships
. SWATH (ship)
. tanks (combat vehicles)
. transporter
. walking machines
RT amphibious vehicles
∞ bicycle
ground effect machines
rail transportation
rails
ships
∞ surfaces
underwater vehicles
urban transportation
∞ vehicles
vehicular tracks
water vehicles

surface water
DEF All the waters on the surface of the Earth including fresh and salt water, ice and snow.
GS water
. **surface water**
RT Earth resources
ground water
lakes
ponds
rivers
streams
∞ surfaces

surface waves
SN (EXCLUDES SURFACE RADIO WAVES)
GS **surface waves**
. capillary waves
. . gravity waves
. . . baroclinic waves
. . ripples
. electromagnetic surface waves
. Sommerfeld waves
RT bow waves
cnoidal waves
crustal fractures
elastic waves
internal waves
lee waves
liquid surfaces
Love waves
microsonics
P waves
S waves
sea roughness
seismic waves
splashing
∞ surfaces
tropospheric waves
tsunami waves
water currents
water waves
∞ waves

surface–active agents
USE **surfactants**

∞ **surfaces**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *curved surfaces*
lifting surfaces
RT air to surface missiles
airfield surface movements
airport surface detection equipment
Apollo Lunar Surface Experiments Package
area
cold surfaces
control surfaces
Cosserat surfaces
crystal surfaces
Earth surface
EASEP
electromagnetic surface waves
elevators (control surfaces)
external surface currents
Fermi surfaces
flaps (control surfaces)
flat surfaces
horizontal tail surfaces
hot surfaces
interfaces
interfacial tension
Lambert surface
liquid surfaces
LSSM
lunar surface
lunar surface vehicles
manned lunar surface vehicles
Mars surface
Mars surface samples
menisci
metal surfaces
minimal surfaces
ocean surface
planetary surfaces
satellite surfaces
sizing (surface treatment)
solid surfaces
surface cooling
surface cracks
surface defects
surface diffusion
surface distortion
surface effect ships
surface energy
surface finishing
∞ surface geometry
surface ionization
surface layers
surface navigation
surface properties
surface reactions
surface roughness
surface roughness effects
surface stability
surface temperature
surface to air missiles
surface to surface missiles
surface to surface rockets
surface vehicles
surface water
surface waves
sweptback tail surfaces
T tail surfaces
tabs (control surfaces)
tail surfaces
Townsend avalanche
trapezoidal tail surfaces
two dimensional bodies
under surface blowing
underwater to surface missiles
upper surface blowing
upper surface blown flaps
Venus surface
wear

surfactants
DEF A material that improves the emulsifying, dispersing, wetting, or other surface–modifying properties of liquids. Used for surface–active agents.
UF *surface–active agents*
RT admixtures
∞ agents
detergents
monomolecular films
plasticizers
retardants
soaps
surface reactions

surgeons
GS personnel
. medical personnel
. . **surgeons**
. . . flight surgeons

surgery
GS medical science
. **surgery**
. . labyrinthectomy
RT clinical medicine
heart implantation
∞ operations
skin grafts
transplantation
veterinary medicine

surges
DEF Transient rises in power or pressure such as a brief rise in the discharge pressure of a rotary compressor. Used for transients (surges).
UF *transients (surges)*
RT circuit protection
fluid flow
overvoltage
storm surges
variations
water hammer
∞ waves

surgical instruments
GS medical equipment
. **surgical instruments**
RT ∞ instruments
needles

Surinam
GS nations
. **Surinam**
RT Caribbean region
Netherlands
South America

surveillance
GS **surveillance**

. space surveillance (ground based)
. space surveillance (spaceborne)
RT command and control
conical scanning
crime
detection
Earth resources
forest fire detection
ice mapping
ice reporting
inspection
observation
panoramic scanning
radar scanning
reconnaissance
scanning
target acquisition
. target recognition
targets

surveillance radar
GS radar
. **surveillance radar**
. . airborne surveillance radar
. . Cobra Dane (radar)
. . multistatic radar
RT air traffic control
airport surface detection equipment
coherent radar
continuous wave radar
digital radar systems
Doppler radar
meteorological radar
pulse radar
radar approach control
radar tracking
radarscopes
satellite-borne radar
search radar
synthetic aperture radar
tracking radar

surveying
USE **surveys**

Surveyor 1 lunar probe
GS lunar spacecraft
. lunar probes
. . Surveyor lunar probes
. . . **Surveyor 1 lunar probe**
soft landing spacecraft
. Surveyor lunar probes
. . **Surveyor 1 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Surveyor lunar probes
. . . . **Surveyor 1 lunar probe**
RT Atlas Centaur launch vehicle

Surveyor 2 lunar probe
GS lunar spacecraft
. lunar probes
. . Surveyor lunar probes
. . . **Surveyor 2 lunar probe**
soft landing spacecraft
. Surveyor lunar probes
. . **Surveyor 2 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Surveyor lunar probes
. . . . **Surveyor 2 lunar probe**
RT Atlas Centaur launch vehicle

Surveyor 3 lunar probe
GS lunar spacecraft
. lunar probes
. . Surveyor lunar probes
. . . **Surveyor 3 lunar probe**
soft landing spacecraft
. Surveyor lunar probes
. . **Surveyor 3 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Surveyor lunar probes
. . . . **Surveyor 3 lunar probe**
RT Atlas Centaur launch vehicle

Surveyor 4 lunar probe
GS lunar spacecraft
. lunar probes
. . Surveyor lunar probes
. . . **Surveyor 4 lunar probe**
soft landing spacecraft
. Surveyor lunar probes
. . **Surveyor 4 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Surveyor lunar probes
. . . . **Surveyor 4 lunar probe**
RT Atlas Centaur launch vehicle

Surveyor 5 lunar probe
GS lunar spacecraft
. lunar probes
. . Surveyor lunar probes
. . . **Surveyor 5 lunar probe**
soft landing spacecraft
. Surveyor lunar probes
. . **Surveyor 5 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Surveyor lunar probes
. . . . **Surveyor 5 lunar probe**
RT Atlas Centaur launch vehicle

Surveyor 6 lunar probe
GS lunar spacecraft
. lunar probes
. . Surveyor lunar probes
. . . **Surveyor 6 lunar probe**
soft landing spacecraft
. Surveyor lunar probes
. . **Surveyor 6 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Surveyor lunar probes
. . . . **Surveyor 6 lunar probe**
RT Atlas Centaur launch vehicle

Surveyor 7 lunar probe
GS lunar spacecraft
. lunar probes
. . Surveyor lunar probes
. . . **Surveyor 7 lunar probe**
soft landing spacecraft
. Surveyor lunar probes
. . **Surveyor 7 lunar probe**
unmanned spacecraft
. space probes
. . lunar probes
. . . Surveyor lunar probes
. . . . **Surveyor 7 lunar probe**
RT Atlas Centaur launch vehicle

Surveyor lunar probes
GS lunar spacecraft
. lunar probes
. . **Surveyor lunar probes**
. . . Surveyor 1 lunar probe
. . . Surveyor 2 lunar probe
. . . Surveyor 3 lunar probe
. . . Surveyor 4 lunar probe
. . . Surveyor 5 lunar probe
. . . Surveyor 6 lunar probe
. . . Surveyor 7 lunar probe
soft landing spacecraft
. **Surveyor lunar probes**
. . Surveyor 1 lunar probe
. . Surveyor 2 lunar probe
. . Surveyor 3 lunar probe
. . Surveyor 4 lunar probe
. . Surveyor 5 lunar probe
. . Surveyor 6 lunar probe
. . Surveyor 7 lunar probe
unmanned spacecraft
. space probes
. . lunar probes
. . . **Surveyor lunar probes**
. . . . Surveyor 1 lunar probe
. . . . Surveyor 2 lunar probe
. . . . Surveyor 3 lunar probe
. . . . Surveyor 4 lunar probe
. . . . Surveyor 5 lunar probe
. . . . Surveyor 6 lunar probe
. . . . Surveyor 7 lunar probe

Surveyor project
GS programs
. lunar programs
. . **Surveyor project**
. NASA programs
. . NASA space programs
. . . **Surveyor project**
. projects
. . **Surveyor project**
. space programs
. . NASA space programs
. . . **Surveyor project**
RT Atlas Centaur launch vehicle
Centaur project
lunar landing
lunar probes
lunar spacecraft
soft landing
soft landing spacecraft

surveys
UF *surveying*
GS **surveys**
. geodetic surveys
. geological surveys
. sky surveys (astronomy)
. wage surveys
RT accuracy
construction
∞ cross sections
data acquisition
data management
datum (elevation)
exploration
general overviews
geometry
layouts
loran
mapping
maps
photogrammetry
position (location)
reconnaissance
soil mapping
∞ statistics

survival
RT aircraft survivability
civil defense
closed ecological systems
desert adaptation

kits
life support systems
lunar shelters
shelters
spacecraft survivability

survival equipment
RT AEPS
aircraft survivability
Assured Crew Return Vehicle
consumables (spacecrew supplies)
emergency life sustaining systems
∞ equipment
lifeboats
onboard equipment
oxygen supply equipment
rafts

susceptibility (magnetism)
USE **magnetic permeability**

suspending (hanging)
GS **suspending (hanging)**
. magnetic suspension
RT gyroscope fluids
mounting
suspension systems (vehicles)
∞ suspensions

suspending (mixing)
GS mixing
. **suspending (mixing)**
RT aeration
agitation
colloiding
dispersing
dispersions
entrainment
ferrofluids
homogenizing
shaking
stirring
∞ suspensions

suspension systems (vehicles)
RT bearings
flotation
levitation
magnetic levitation vehicles
riding quality
shock absorbers
springs (elastic)
steering
suspending (hanging)
∞ suspensions
∞ systems
toroidal wheels
undercarriages
vehicle wheels
vehicular tracks
vibration isolators

∞ **suspensions**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF A two-phase system consisting of a finely divided solid dispersed in a solid, liquid, or gas.
RT Brownian movements
dispersions
ferrofluids
solid suspensions
suspending (hanging)
suspending (mixing)
suspension systems (vehicles)

Susquehanna River Basin (MD–NY–PA)
GS landforms
. structural basins
. . river basins
. . . **Susquehanna River Basin (MD–NY–PA)**
RT Maryland
New York
Pennsylvania
rivers
streams
valleys

sustainer rocket engines
DEF Rocket engines that maintain the velocity of the rocket once it has achieved its programmed velocity by use of boosters or other engines.
GS engines
. rocket engines
. . **sustainer rocket engines**
RT booster rocket engines
ducted rocket engines
electric rocket engines
electrostatic engines
electrothermal engines
hybrid propellant rocket engines
internal combustion engines
ion engines
launch vehicles
liquid air cycle engines
liquid propellant rocket engines
nuclear engine for rocket vehicles
nuclear rocket engines
restartable rocket engines
solid propellant rocket engines
stage separation
∞ sustaining
turborocket engines
TX–354 engine

∞ **sustaining**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT life support systems
supports
sustainer rocket engines

swaging
RT cold working
metal working
stamping

swallowing
RT drinking
eating
ingestion (biology)

swamps
USE **marshlands**

Swan bands
GS spectra
. spectral bands
. . **Swan bands**
RT ∞ bands
carbon compounds
chemical bonds
emission spectra
molecular spectra

swarming
RT bees
∞ motion

swash
USE **splashing**

SWATH (ship)
DEF Small waterplane area twin hull concept extension of hydrofoils for improving seaworthiness and speed. Used for Small Waterplane Area Twin Hull.
UF *Small Water Plane Area Twin Hull*
GS surface vehicles
. **SWATH (ship)**
water vehicles
. ships
. . **SWATH (ship)**
RT captured air bubble vehicles
hulls (structures)
surface effect ships
∞ vehicles

swath width
DEF The width of the area covered by an imaging sensor determined by the geometry of the instrument.
RT agricultural aircraft
flight paths
remote sensing
satellite observation

Swaziland
GS nations
. **Swaziland**
RT Africa
Republic of South Africa

sweat
GS body fluids
. **sweat**
secretions
. **sweat**
RT perspiration

sweat cooling
DEF A process by which a body having a porous surface is cooled by forced flow of coolant through the surface from the interior. Used for transpiration cooling.
UF *transpiration cooling*
GS cooling
. evaporative cooling
. . **sweat cooling**
RT film cooling
liquid cooling
surface cooling

sweating
USE **perspiration**

Sweden
GS nations
. **Sweden**
RT Europe
JAS–39 aircraft
Scandinavia
Swedish space program

Swedish space program
GS programs
. space programs
. . European space programs
. . . **Swedish space program**
RT Sweden

sweep angle
GS geometry
. Euclidean geometry
. . angles (geometry)
. . . **sweep angle**
. . . . sweepback
. . . . . leading edge sweep
RT aerodynamic stalling
angle of attack
boundary layer separation
Mach number

sweep circuits
GS circuits
. **sweep circuits**
RT frequency scanning
oscilloscopes
sampling

sweep effect
RT ∞ **effects**
force distribution
lift
∞ loading
wing loading

sweep frequency
UF *electron sweeping*
GS frequencies
. **sweep frequency**
RT carrier frequencies
frequency analyzers
frequency scanning
frequency synchronization
oscilloscopes
television transmission

sweepback
UF *sweepback angles*
GS geometry
. Euclidean geometry
. . angles (geometry)
. . . sweep angle
. . . . **sweepback**
. . . . . leading edge sweep
RT supersonic airfoils

sweepback angles
USE **sweepback**

swelling
RT distortion
expansion
growth
increasing
inflating
spreading

swept forward wings
GS airfoils
. wings
. . swept wings
. . . **swept forward wings**
. . . . trapezoidal wings
planforms
. wing planforms
. . **swept forward wings**
. . . trapezoidal wings
RT sweptback wings
variable sweep wings
X-29 aircraft

swept wings
UF *cranked wings*
diamond wings
tapered wings
GS airfoils
. wings
. . **swept wings**
. . . swept forward wings
. . . . trapezoidal wings
. . . sweptback wings
. . . . arrow wings
. . . . delta wings
. . . . trapezoidal wings
RT fixed wings
spanloader aircraft
unswept wings
wing planforms

sweptback tail surfaces
GS assemblies
. tail assemblies
. . **sweptback tail surfaces**
planforms
. **sweptback tail surfaces**
tail surfaces
. **sweptback tail surfaces**
RT control surfaces
hypersonic aircraft
rudders
stabilizers (fluid dynamics)
supersonic airfoils
∞ surfaces
T tail surfaces
trapezoidal tail surfaces

sweptback wings
GS airfoils
. wings
. . swept wings
. . . **sweptback wings**
. . . . arrow wings
. . . . delta wings
. . . . trapezoidal wings
planforms
. wing planforms
. . **sweptback wings**
. . . arrow wings
. . . delta wings
. . . trapezoidal wings
RT hypersonic aircraft
supersonic aircraft
supersonic airfoils
swept forward wings
variable sweep wings

swimming
RT physical exercise
physical fitness

swimming pool reactors
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . **swimming pool reactors**
RT ∞ reactors

swine
SN (EXCLUDES GUINEA PIGS)
UF *pigs (swine)*
3S animals
. vertebrates
. . mammals
. . . **swine**
RT grazing
livestock

swing tail assemblies
GS assemblies
. tail assemblies
. . **swing tail assemblies**
RT afterbodies
aircraft parts
aircraft structures

swing wings
GS airfoils
. wings
. . **swing wings**
RT aircraft parts
aircraft structures
wing planforms
wing profiles

swingby technique
UF *gravity assist trajectories*
RT flyby missions
gravitational effects
interplanetary transfer orbits
orbital mechanics
planetary orbits
round trip trajectories
spacecraft trajectories

swirling
RT agitation
centrifuging
dispersing
foaming
mixing
∞ separation
shaking
stirring

swirling wakes
USE **turbulent wakes**

Swiss space program
GS programs
. space programs
. . European space programs
. . . **Swiss space program**
RT Switzerland

switches
GS **switches**
. capacitance switches
. electric relays
. electric switches
. . cryotrons
. . stepping switches
. . thermostats
. . vacuum arc switches
. pressure switches
. switching circuits
. . fluid switching elements
. trigatrons
RT circuit breakers
dropouts
echo suppressors
electric connectors
electric contacts
interruption
selectors
switching

switching
GS **switching**
. beam switching
. magnetic switching
. microwave switching
. optical switching
. packet switching
RT code division multiple access
interruption
sequencing
step recovery diodes
switches
time division multiple access

switching circuits
UF *electronic switches*
switching elements
GS circuits
. **switching circuits**
. . fluid switching elements
switches
. **switching circuits**
. . fluid switching elements
RT ARPA computer network
capacitance switches
circuit breakers
current regulators
duplex operation
duplexers
electric relays

electric switches
gates (circuits)
latch-up
logic circuits
matrices (circuits)
microwave switching
multivibrators
optical bistability
optical switching
packet switching
selectors
squelch circuits
vacuum arc switches
voltage regulators

switching elements
USE **switching circuits**

switching theory
RT Boolean algebra
branching (mathematics)
communication theory
commutation
logic design
network synthesis
packet switching
sequencing
∞ theories
topology

Switzerland
GS nations
. **Switzerland**
RT Alps Mountains (Europe)
Europe
Swiss space program

swivels
RT bearings
gimbals
hinges
hooks
joints (junctions)
pivots

syenite
GS rocks
. igneous rocks
. . **syenite**
RT soils
trachyte

syllables
RT messages
psycholinguistics
semantics
signal transmission

symbiosis
DEF The intimate living together of two organisms of different species, for mutual benefit.
RT ecology
lichens

symbiotic stars
GS celestial bodies
. stars
. . double stars
. . . binary stars
. . . . **symbiotic stars**
. . peculiar stars
. . . **symbiotic stars**
. . variable stars
. . . **symbiotic stars**
RT absorption spectra
eclipsing binary stars
emission spectra
flare stars
M stars
novae
stellar envelopes
stellar mass accretion
stellar oscillations
stellar spectra
stellar temperature

symbolic programming
GS computer programming
. **symbolic programming**
RT coding
computer assisted instruction
context free languages
language programming
mnemonics

symbols
UF *characters*
letters (symbols)
signs (symbols)
GS **symbols**
. alphanumeric characters
. . digits
. . . binary digits
RT abbreviations
alphabets
character recognition
∞ codes
coding
color
data processing
high level languages
languages
legibility
∞ mathematics
message processing
messages
mnemonics
nomenclatures
perception
reading
semantics
∞ signals
units of measurement
visibility

symmetrical bodies
GS **symmetrical bodies**
. axisymmetric bodies
. . power law bodies
. bodies of revolution
. . conical bodies
. . . slender cones
. . cylindrical bodies
. . . rotating cylinders
. . parabolic bodies
. . power law bodies
. . spheres
. . . celestial sphere
. . . concentric spheres
. . . falling spheres
. . . Poincare spheres
. . . rotating spheres
. . toruses
. ellipsoids
. lenticular bodies
. streamlined bodies
. . fairings
RT axes of rotation
blunt bodies
∞ bodies
cones
finned bodies
flared bodies
geoids
ogives
slender bodies
spinning unguided rocket trajectory

symmetry
UF *axisymmetry*
GS **symmetry**
. broken symmetry
. chirality
. supersymmetry
RT antisymmetry
asymmetry
congruences
continuity (mathematics)
eccentricity
geometry
grand unified theory
isotropism
quantities
shapes

symmetry breaking
USE **broken symmetry**

sympathetic nervous system
GS anatomy
. nervous system
. . autonomic nervous system
. . . **sympathetic nervous system**
RT ∞ systems

sympathomimetics
USE **adrenergics**

Symphonie satellites
GS artificial satellites
. communication satellites
. . **Symphonie satellites**
RT Arcomsat
broadcasting
European space programs
French satellites
international cooperation
radio transmission
satellite television
synchronous satellites
telephony

symposia
USE **conferences**

symptomology
GS medical science
. **symptomology**
RT diseases
signs and symptoms

symptoms
USE **signs and symptoms**

synapses
RT nerves
nervous system
neuromuscular transmission
neurons
neurotransmitters
syncoders

synchrocyclotrons
GS particle accelerators
. cyclic accelerators
. . **synchrocyclotrons**
. cyclotrons
. . **synchrocyclotrons**
RT bevatron
synchrotrons

synchronism
DEF The relationship between two or more periodic quantities of the same frequency when

the phase difference between them is zero or constant at a predetermined value. Used for beat and synchronization.
UF *beat*
synchronization
GS **synchronism**
. bit synchronization
. frequency synchronization
RT coincidence circuits
Dining Philosophers Problem
phase detectors
stroboscopes
synchronizers
synchrophasing
time
time measurement

synchronization
USE **synchronism**

synchronized oscillators
GS oscillators
. **synchronized oscillators**
RT frequency synchronization
phase locked systems
synchroscopes

synchronizers
RT heliostats
pulse radar
servomotors
synchronism

Synchronous Communication Satellites
USE **SYNCOM satellites**

Synchronous Communications Satellite Proj
SN (SYNCHRONOUS COMMUNICATIONS SATELLITE PROJECT)
GS programs
. NASA programs
. . NASA space programs
. . . **Synchronous Communications Satellite Proj**
. projects
. . **Synchronous Communications Satellite Proj**
. space programs
. . NASA space programs
. . . **Synchronous Communications Satellite Proj**
RT communication satellites
twenty-four hour orbits

synchronous detectors
USE **correlators**

Synchronous Earth Observatory satellite
UF *SEOS*
GS artificial satellites
. meteorological satellites
. . **Synchronous Earth Observatory satellite**
. . . SMS 1
. . . SMS 2
. synchronous satellites
. . **Synchronous Earth Observatory satellite**
. . . SMS 1
. . . SMS 2
RT early warning systems
Landsat satellites
NASA programs
programs
satellite observation
SEASAT satellites
Synchronous Meteorological Satellite
technology utilization

Synchronous Meteorological Satellite
UF *SMS*
GS artificial satellites
. meteorological satellites
. . **Synchronous Meteorological Satellite**
. . . SMS 1
. . . SMS 2
. synchronous satellites
. . **Synchronous Meteorological Satellite**
. . . SMS 1
. . . SMS 2
RT communication satellites
Synchronous Earth Observatory satellite

synchronous motors
GS motors
. electric motors
. . **synchronous motors**
RT asynchronous motors
induction motors

synchronous platforms
DEF Space platforms whose rotation is synchronized with that of Earth. Used for geostationary platforms.
UF *geostationary platforms*
GS space platforms
. **synchronous platforms**
RT communication satellites
geosynchronous orbits
∞ platforms
synchronous satellites

synchronous satellites
DEF Equatorial west-to-east satellites orbiting the Earth at an altitude of approximately 35,900 kilometers, at which they make one revolution in 24 hours, synchronous with the Earth's rotation. Used for geostationary satellites.
UF *geostationary satellites*
GS artificial satellites
. **synchronous satellites**
. . AEROS satellite
. . Aerosat satellites
. . Anik satellites
. . . Anik 1
. . . Anik 2
. . . Anik 3
. . GOES satellites
. . . GOES 1
. . . GOES 2
. . . GOES 3
. . . GOES 4
. . . GOES 5
. . . GOES 6
. . . GOES 7
. . . GOES 8
. . . GOES 9
. . Miranda satellite
. . SIRIO satellite
. . StormSat satellite
. . Synchronous Earth Observatory satellite
. . . SMS 1
. . . SMS 2
. . Synchronous Meteorological Satellite
. . . SMS 1
. . . SMS 2
. . SYNCOM satellites
. . . Early Bird satellites
. . . SYNCOM 1 satellite
. . . SYNCOM 2 satellite
. . . SYNCOM 3 satellite
. . . SYNCOM 4 satellite
. . . TD satellites
. . . TD-1 satellite
RT active satellites
Arcomsat
Canadian space program
communication satellites
Communications Technology Satellite
military spacecraft
navigation satellites
passive satellites
Relsat
stationary orbits
Symphonie satellites
synchronous platforms
twenty-four hour orbits

synchrophasing
RT aircraft noise
noise reduction
propeller blades
synchronism

synchrophasotrons
GS particle accelerators
. **synchrophasotrons**
RT∞ accelerators
synchrotrons

synchroscopes
GS circuits
. phase detectors
. . **synchroscopes**
RT correlators
measuring instruments
oscilloscopes
synchronized oscillators

synchrotron radiation
GS electromagnetic radiation
. nonthermal radiation
. . **synchrotron radiation**
. polarized electromagnetic radiation
. . **synchrotron radiation**
polarized radiation
. polarized electromagnetic radiation
. . **synchrotron radiation**
RT bremsstrahlung
extraterrestrial radiation
∞ radiation
radiation protection
synchrotrons
x rays

synchrotrons
DEF Devices for accelerating particles, ordinarily electrons, in a circular orbit in an increasing magnetic field by means of an alternating field applied in a synchronism with the orbital motion.
GS particle accelerators
. cyclic accelerators
. . **synchrotrons**
. . . betatron
. . . storage rings (particle accelerators)
RT betatrons
cyclotrons
electron accelerators
ion accelerators
microtrons
synchrocyclotrons
synchrophasotrons
synchrotron radiation

synclines
UF *synclinoria*
RT anticlines
domes (geology)

geological faults
geosynclines
∞ layers
strata
stratification
stratigraphy

synclinoria
USE **synclines**

syncoders
RT bionics
neurons
synapses

SYNCOM 1 satellite
GS artificial satellites
. active satellites
. . SYNCOM satellites
. . . **SYNCOM 1 satellite**
. communication satellites
. . SYNCOM satellites
. . . **SYNCOM 1 satellite**
. synchronous satellites
. . SYNCOM satellites
. . . **SYNCOM 1 satellite**
RT Delta launch vehicle

SYNCOM 2 satellite
GS artificial satellites
. active satellites
. . SYNCOM satellites
. . . **SYNCOM 2 satellite**
. communication satellites
. . SYNCOM satellites
. . . **SYNCOM 2 satellite**
. synchronous satellites
. . SYNCOM satellites
. . . **SYNCOM 2 satellite**
RT Delta launch vehicle

SYNCOM 3 satellite
GS artificial satellites
. active satellites
. . SYNCOM satellites
. . . **SYNCOM 3 satellite**
. communication satellites
. . SYNCOM satellites
. . . **SYNCOM 3 satellite**
. synchronous satellites
. . SYNCOM satellites
. . . **SYNCOM 3 satellite**
RT Delta launch vehicle

SYNCOM 4 satellite
DEF A geosynchronous communications satellite that was deployed on Space Shuttle STS 51A in November 1984.
GS artificial satellites
. active satellites
. . SYNCOM satellites
. . . **SYNCOM 4 satellite**
. communication satellites
. . SYNCOM satellites
. . . **SYNCOM 4 satellite**
. synchronous satellites
. . SYNCOM satellites
. . . **SYNCOM 4 satellite**

SYNCOM apogee engines
GS engines
. rocket engines
. . solid propellant rocket engines
. . . **SYNCOM apogee engines**
. . Vernier engines
. . . **SYNCOM apogee engines**
. torpedo engines
. . Vernier engines
. . . **SYNCOM apogee engines**

SYNCOM satellites
UF *Synchronous Communication Satellites*
GS artificial satellites
. active satellites
. . **SYNCOM satellites**
. . . Early Bird satellites
. . . SYNCOM 1 satellite
. . . SYNCOM 2 satellite
. . . SYNCOM 3 satellite
. . . SYNCOM 4 satellite
. communication satellites
. . **SYNCOM satellites**
. . . Early Bird satellites
. . . SYNCOM 1 satellite
. . . SYNCOM 2 satellite
. . . SYNCOM 3 satellite
. . . SYNCOM 4 satellite
. synchronous satellites
. . **SYNCOM satellites**
. . . Early Bird satellites
. . . SYNCOM 1 satellite
. . . SYNCOM 2 satellite
. . . SYNCOM 3 satellite
. . . SYNCOM 4 satellite
RT Thor Delta launch vehicle

syncope
UF *fainting*
GS **syncope**
. blackout (physiology)
. . blackout prevention
RT unconsciousness

syndromes
USE **signs and symptoms**

synoptic measurement
RT ∞ measurement
nephanalysis

synoptic meteorology
DEF The study and analysis of weather information gathered at the same time.
GS meteorology
. **synoptic meteorology**
RT air masses
anticyclones
cold fronts
cyclones
fronts (meteorology)
meteorological charts
nephanalysis
teleconnections (meteorology)
warm fronts
weather forecasting

syntax
GS linguistics
. **syntax**
RT format
grammars
∞ interpretation
languages
natural language processing
orthography
parsing algorithms
psycholinguistics
semantics
sentences
speech

syntactic alloys
DEF Metallic composite materials characterized by a reversible convertibility of their solid phases into two liquid phases by the application of heat.
GS alloys
. **syntactic alloys**
RT eutectics
liquid phases
metals
phase transformations
solid phases

synthane
UF *synthetic methane*
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . **synthane**
. . synthetic fuels
. . . **synthane**
RT automobile fuels
carbon dioxide
carbon monoxide
coal
coal gasification
gasification
hydrogen
lignite
methane

∞ **synthesis**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT biosynthesis
chemical reactions
decision theory
∞ design
network synthesis
nuclear fusion
operations research
plasma jet synthesis
synthesis (chemistry)
synthetic fuels
systems engineering

synthesis (chemistry)
DEF The application of chemical reactions to obtain desired chemical products.
GS **synthesis (chemistry)**
. polymerization
. . copolymerization
. . dimerization
RT addition resins
chemical reactions
∞ chemistry
Fischer-Tropsch process
operations research
∞ synthesis
synthetic fibers
synthetic fuels
synthetic resins
synthetic rubbers
systems engineering

synthesizers
RT chemical reactors
• frequency synthesizers

synthetic aperture radar
DEF Active microwave sensor providing all-weather, high resolution imagery. Used for imaging radar.
GS radar
. **synthetic aperture radar**
. . Shuttle Imaging Radar
. . side-looking radar
RT airborne radar
Earthnet
ground penetrating radar

imaging radar
Magellan spacecraft (NASA)
microwave imagery
microwave sensors
radar equipment
Radarsat
satellite-borne radar
surveillance radar
synthetic apertures
Venus orbiting imaging radar
(spacecraft)

synthetic apertures
DEF In radar technology, the simulations of large antennas by correcting the phase and magnitude of the return signals from smaller antennas, permitting the use of lower frequencies for airborne radars.
GS openings
. apertures
. . **synthetic apertures**
RT imaging techniques
synthetic aperture radar

synthetic arrays
GS arrays
. **synthetic arrays**
RT antenna radiation patterns
apertures
distribution (property)
∞ patterns
Shuttle Imaging Radar

synthetic fibers
GS fibers
. **synthetic fibers**
. . aramid fibers
. . . Kevlar (trademark)
. . ceramic fibers
. . Dacron (trademark)
. . Fortisan (trademark)
. . glass fibers
. . Nylon (trademark)
. . rayon
. . Vyoor
RT addition resins
flame retardants
Kevlar (trademark)
polyacrylonitrile
polybenzimidazole
polyesters
reinforcing fibers
synthesis (chemistry)
wet spinning

synthetic food
DEF Mixture of roughage, vitamins, minerals, etc., closely approximating natural foods in appearance, taste, and nutrition.
RT amino acids
biosynthesis
carbohydrates
cellulose
eating
fats
∞ food
food intake
nutritional requirements
protein metabolism
proteins
taste

synthetic fuels
GS fuels
. chemical fuels
. . **synthetic fuels**
. . . gasohol (fuel)
. . . synthane
RT chemical reactions
clean fuels
Fischer-Tropsch process
hydrocarbon fuels
liquid fuels
∞ synthesis
synthesis (chemistry)

synthetic metals
DEF Materials which do not occur in nature but have the appearance and physical properties of true metals.
RT crystal lattices
graphite
organometallic compounds

synthetic methane
USE **synthane**

synthetic resins
GS plastics
. **synthetic resins**
. . addition resins
. . . acrylic resins
. . . vinyl copolymers
. . polyester resins
. . polyether resins
. . . PEEK
. . . polymethyl methacrylate
. . thermoplastic resins
. . . PEEK
. . . quinoxalines
. . . thermoplastic films
. . thermosetting resins
. . . epoxy resins
. . . . phenolic epoxy resins
. . . furan resins
. . . . polyamide resins
. . . . . Kevlar (trademark)
. . . . . Nylon (trademark)
. . . phenolic resins
. . . . micarta
. . . . phenolic epoxy resins
resins
. **synthetic resins**
. . addition resins
. . . acrylic resins
. . . vinyl copolymers
. . polyester resins
. . polyether resins
. . . PEEK
. . . polymethyl methacrylate
. . thermoplastic resins
. . . PEEK
. . . quinoxalines
. . . thermoplastic films
. . thermosetting resins
. . . epoxy resins
. . . . phenolic epoxy resins
. . . furan resins
. . . . polyamide resins
. . . . . Kevlar (trademark)
. . . . . Nylon (trademark)
. . . phenolic resins
. . . . micarta
. . . . phenolic epoxy resins
RT polyethylenes
∞ polymers
polypropylene
polystyrene
polytetrafluoroethylene
polyvinyl alcohol
polyvinyl chloride
synthesis (chemistry)
teflon (trademark)

synthetic rubbers
GS elastomers
. rubber
. . **synthetic rubbers**
. . . Adiprene (trademark)
. . . Buna (trademark)
. . . silicone rubber
. . . . RTV-40 rubber (trademark)
. . . . RTV-60 rubber (trademark)
. . . Viton rubber (trademark)
. . . vulcanized elastomers
. . . . RTV-40 rubber (trademark)
. . . . RTV-60 rubber (trademark)
. . . chloroprene resins
RT latex
polybutadiene
polyisobutylene
polyisoprenes
solithanes
synthesis (chemistry)

synthetic vision
USE **enhanced vision**

syntony
DEF The situation of two or more oscillating circuits having the same resonant frequency.
RT frequency synchronization
oscillations
resonance

syphilis
GS diseases
. infectious diseases
. . bacterial diseases
. . . **syphilis**

Syria
GS nations
. **Syria**
RT Asia

syringes
GS laboratory equipment
. **syringes**
medical equipment
. **syringes**
RT bulbs
∞ equipment
fluid flow
pipes (tubes)
transfusion

System 10 computer
USE **PDP 10 computer**

system effectiveness
GS effectiveness
. **system effectiveness**
RT modulation transfer function
optical transfer function
reliability
reliability engineering
∞ systems
systems engineering
systems health monitoring
systems integration

system failures
GS failure
. **system failures**
RT ∞ breakdown
deterioration
downtime
fatigue (materials)
fault detection
malfunctions
short circuits
structural failure

structural strain
∞ systems
wear

system generated electromagnetic pulses
DEF Electromagnetic fields generated by the emission of a large electronic current from a metallic body in space caused by the incidence on its surface of strong ionizing radiation pulses (usually x ray) from space. Used for SGEMP.
UF *SGEMP*
GS electromagnetic fields
. **system generated electromagnetic pulses**
electromagnetic radiation
. electromagnetic pulses
. . **system generated electromagnetic pulses**
pulsed radiation
. electromagnetic pulses
. . **system generated electromagnetic pulses**
pulses
. electromagnetic pulses
. . **system generated electromagnetic pulses**
RT electric current
electric pulses
electromagnetic interference
electronic equipment
external surface currents
extraterrestrial radiation
ionizing radiation
plasma sheaths
satellite communication
spacecraft charging
spacecraft communication
x rays

system identification
DEF The technology of modeling plants and processes from their dynamic response.
GS estimating
. **system identification**
identifying
. **system identification**
systems analysis
. **system identification**
RT complex systems
control systems design
dynamic response
estimates
fuzzy systems
mathematical models
maximum likelihood estimates
observability (systems)
optimization
parameter identification
parameterization
prediction analysis techniques
probability theory
reliability engineering
statistical analysis
steepest descent method
∞ systems
systems engineering

systematic errors
(added April 1997)
DEF Non-random and often predictable errors due to some physical law or caused by flaws in a measurement process.
GS errors
. **systematic errors**
RT error analysis
instrument compensation
instrument errors
random errors

∞ **systems**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Advanced Vidicon Camera System (AVCS)
aerospace systems
afferent nervous systems
African rift system
air cushion landing systems
Airborne Integrated Reconnaissance System
aircraft fuel systems
aircraft hydraulic systems
all-weather landing systems
Aloha system
annular suspension and pointing system
Apollo extension system
ascent propulsion systems
Astroguide Navigation System
Atmospheric & Oceanographic Inform Sys
automated pilot advisory system
automated radar terminal system
automatic traffic advisory and resolution
autonomic nervous system
Ballistic Missile Early Warning System
Beacon Collision Avoidance System
binary systems (materials)
Bioastronautical Orbital Space System
biocontrol systems
cardiovascular system
celestial reference systems
Central Electronic Management System
central nervous system
central nervous system depressants
central nervous system stimulants
chokes (fuel systems)
closed ecological systems
complex systems
computer systems design
computer systems performance
computer systems programs
computer systems simulation
cooling systems
cybernetics
data base management systems
data systems
Defense Communications Satellite System
defense communications system (DCS)
descent propulsion systems
digestive system
digital command systems
digital systems
discrete address beacon system
disk operating system (DOS)
display devices
distributed parameter systems
domestic satellite communications systems
early warning systems
Earth Resources Information System
Earth terminal measurement system
Earth-Moon system
ecosystems
efferent nervous systems
EISCAT radar system (Europe)
∞ elastic systems
electronic recording systems
emergency life sustaining systems
endocrine systems
end-to-end data systems
escape systems
exhaust systems
fail-safe systems
feed systems
feedback
Fleet Satellite Communication System
fuel systems
fuzzy systems
gastrointestinal system
genitourinary system
Global Positioning System
Goddard Trajectory Determination System
ground operational support system
ground support systems
guidance (motion)
hardening (systems)
hematopoietic system
hybrid navigation systems
hydraulic equipment
hydroplanes (surfaces)
hydrothermal systems
∞ hyperbolic systems
IFF systems (identification)
ignition systems
IMLSS
inertial reference systems
information adaptive system
information systems
instrument landing systems
intake systems
integrated energy systems
integrated global ocean station systems
International System of Units
intravascular system
jettison systems
launch escape systems
life support systems
Light Airborne Multipurpose System
linear systems
LOCATES system
LORAC navigation system
lubrication systems
lumped parameter systems
Lunar Exploration System for Apollo
man machine systems
man operated propulsion systems
management information systems
management systems
metal-gas systems
methoxy systems
microwave landing systems
microwave scanning beam landing system
MIMO (control systems)
minitrack system
Miros system
missile systems
Modular Integrated Utility System
musculoskeletal system
NASA Interactive Planning System
National Airspace Utilization System
National Aviation System
National Oceanic Satellite System
navigation
needs (data system)
nervous system
Nike X systems
NOESS
nonlinear systems
Nova Laser System
observability (systems)
Omega Navigation System
on-line systems
operating systems (computers)
optical relay systems
payload deployment & retrieval system

peripheral nervous system
phase locked systems
piggyback systems
planetary systems
PLAT system
pneumatic equipment
pointing control systems
polystation doppler tracking system
portable life support systems
post boost propulsion system
propulsion system configurations
propulsion system performance
public address systems
quality control
radio relay systems
Ranger block 3 television system
rapid transit systems
∞ reference systems
remote manipulator system
reproductive systems
respiratory system
rotor systems research aircraft
Safeguard system
SAGE air defense system
satellite navigation systems
self adaptive control systems
self organizing systems
Sentinel system
Shiva laser system
SISO (control systems)
SNAP
solar system
solar total energy systems
space detection and tracking system
space transportation system
Space Transportation System flights
support systems
suspension systems (vehicles)
sympathetic nervous system
system effectiveness
system failures
system identification
systems analysis
systems engineering
systems integration
systems management
systems simulation
systems stability
telecommunication
telegraph systems
teletypewriter systems
television systems
TERCOM
ternary systems
TIROS operational satellite system
total energy systems
TRADEX radar system
transcontinental systems
transfer functions
transoceanic systems
Typhon weapon system
vacuum systems
variable mass systems
vortex advisory system
warning systems
weapon system management
weapon systems

systems analysis
GS **systems analysis**
. system identification
RT ∞ analyzing
block diagrams
bond graphs
complex systems
computer programming
computer systems programs
computer systems simulation
control systems design
feasibility analysis
fuzzy systems
man machine systems
mathematical models
modulation transfer function
observability (systems)
operating costs
operations research
optical transfer function
parameter identification
preflight analysis
procedures
program verification (computers)
simulation
sociology
statistical analysis
∞ systems
trajectory analysis
weight analysis
weight reduction

systems compatibility
GS compatibility
. **systems compatibility**
RT reliability
reliability engineering

systems design
USE **systems engineering**

systems engineering
DEF The process of applying science and technology to the study and planning of a system so that the relationships of various parts of the system and the use of various subsystems are fully established before designs are committed.
UF *systems design*
GS **systems engineering**
. computer systems design
. control systems design
RT aerospace systems
aircraft design
∞ automation
bionics
bond graphs
communicating
concurrent engineering
contract management
∞ control
critical path method
cybernetics
data processing
decision making
decision theory
∞ design
electrical engineering
∞ engineering
experiment design
flight management systems
forecasting
functional design specifications
human factors engineering
information theory
life cycle costs
man machine systems
management
management planning
mathematical models
mechanization
missile design
modularity
multidisciplinary design optimization
observability (systems)
operational problems
∞ operations
operations research
optical transfer function
orbit spectrum utilization
parameter identification
reliability
reliability engineering
research and development
reverse engineering
satellite design
software engineering
spacecraft design
statistical analysis
∞ statistics
∞ synthesis
synthesis (chemistry)
system effectiveness
system identification
∞ systems
systems integration

Systems for Nuclear Auxiliary Power
USE **SNAP**

systems health monitoring
(added July 1995)
SN ((NOT USED FOR PHYSIOLOGICAL, PSYCHOLOGICAL, OR BIOLOGICAL SYSTEMS))
RT component reliability
engine monitoring instruments
expert systems
fault detection
life (durability)
propulsion system performance
service life
smart structures
software reliability
system effectiveness

systems integration
DEF The combining of subsystems each with numerous interfaces for the input and output of data and each with specified functions vital to the planned success of the main system.
RT airborne/spaceborne computers
avionics
control systems design
digital systems
system effectiveness
∞ systems
systems engineering
systems simulation

systems management
GS management
. **systems management**
RT industrial management
information systems
man machine systems
management methods
operations research
∞ systems

systems simulation
DEF The simulation of any dynamic system.
GS simulation
. **systems simulation**
. . computer systems simulation
RT analog simulation
computerized simulation
dynamic models
dynamical systems
flight simulation
mathematical models
model reference adaptive control

operations research
∞ systems
systems integration

systems stability
GS stability
. **systems stability**
RT control stability
dynamic stability
equations of motion
∞ equilibrium
flow stability
loop transfer recovery
MIMO (control systems)
SISO (control systems)
∞ systems
unsteady state

systole
GS heart function
. **systole**
rates (per time)
. **systole**
RT blood flow
blood pressure
cardiac ventricles
cardiovascular system
diastole
heart rate
systolic pressure

systolic arrays
GS arrays
. **systolic arrays**
RT algorithms
architecture (computers)
chips (electronics)
computation
parallel processing (computers)
very large scale integration

systolic pressure
GS pressure
. blood pressure
. . **systolic pressure**
RT systole

T

T shape
UF *tee*
GS **shapes**
. **T shape**
RT beams (supports)

T tail surfaces
GS assemblies
. tail assemblies
. . **T tail surfaces**
tail surfaces
. **T tail surfaces**
RT control surfaces
stabilizers (fluid dynamics)
∞ surfaces
sweptback tail surfaces

T Tauri stars
GS celestial bodies
. stars
. . protostars
. . . pre-main sequence stars
. . . . **T Tauri stars**
. . variable stars
. . . **T Tauri stars**
RT Herbig-Haro objects
star formation
Taurus constellation

T-2 aircraft
UF *buckeye aircraft*
T2J aircraft
YT-2 aircraft
GS attack aircraft
. **T-2 aircraft**
jet aircraft
. **T-2 aircraft**
monoplanes
. **T-2 aircraft**
North American aircraft
. **T-2 aircraft**
single engine aircraft
. **T-2 aircraft**
training aircraft
. **T-2 aircraft**
RT ∞ aircraft

T-28 aircraft
UF *Trojan aircraft*
GS monoplanes
. **T-28 aircraft**
North American aircraft
. **T-28 aircraft**
single engine aircraft
. **T-28 aircraft**
training aircraft
. **T-28 aircraft**
RT ∞ aircraft

T-33 aircraft
UF *F-80 aircraft*
Shooting Star aircraft
GS jet aircraft
. **T-33 aircraft**
Lockheed aircraft
. **T-33 aircraft**
monoplanes
. **T-33 aircraft**
single engine aircraft
. **T-33 aircraft**
training aircraft
. **T-33 aircraft**
RT ∞ aircraft

T-34 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-34 engine**
. aircraft engines
. . **T-34 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-34 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-34 engine**
RT C-133 aircraft

T-37 aircraft
GS Cessna aircraft
. **T-37 aircraft**
jet aircraft
. **T-37 aircraft**
monoplanes
. **T-37 aircraft**
training aircraft
. **T-37 aircraft**
RT A-37 aircraft
∞ aircraft

T-38 aircraft
UF *Talon aircraft*
GS jet aircraft
. **T-38 aircraft**
monoplanes
. **T-38 aircraft**
Northrop aircraft
. **T-38 aircraft**
supersonic aircraft
. **T-38 aircraft**
training aircraft
. **T-38 aircraft**
RT ∞ aircraft

T-38 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-38 engine**
. aircraft engines
. . **T-38 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-38 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-38 engine**

T-39 aircraft
UF *Sabreliner aircraft*
T3J aircraft
GS jet aircraft
. **T-39 aircraft**
monoplanes
. **T-39 aircraft**
North American aircraft
. **T-39 aircraft**
passenger aircraft
. **T-39 aircraft**
training aircraft
. **T-39 aircraft**
utility aircraft
. **T-39 aircraft**
RT ∞ aircraft
cargo aircraft

T-53 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-53 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-53 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-53 engine**
RT helicopter engines

T-55 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-55 engine**
. aircraft engines
. . **T-55 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-55 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-55 engine**
RT helicopter engines

T-56 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-56 engine**
. internal combustion engines
. . gas turbine engines

. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-56 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-56 engine**
RT C-130 aircraft

T-58 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . **T-58 engine**
. internal combustion engines
. . gas turbine engines
. . . **T-58 engine**
. turbine engines
. . gas turbine engines
. . . **T-58 engine**
RT aircraft engines
helicopter engines
vertical takeoff aircraft

T-63 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-63 engine**
. aircraft engines
. . **T-63 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-63 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-63 engine**
RT helicopter engines

T-64 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-64 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-64 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-64 engine**
RT helicopter engines

T-74 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-74 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-74 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-74 engine**
RT helicopter engines

T-76 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-76 engine**
. aircraft engines
. . **T-76 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-76 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-76 engine**
RT helicopter engines

T-78 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-78 engine**
. aircraft engines
. . **T-78 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-78 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . **T-78 engine**

T2J aircraft
USE **T-2 aircraft**

T3J aircraft
USE **T-39 aircraft**

tables (data)
DEF (1) An array of data, each item of which may be unambiguously identified by means of one or more arguments. (2) A collection of data in which each item is uniquely identified by a label, by its position relative to the other items, or by some other means.
GS **tables (data)**
. conversion tables
. interference factor table
. mathematical tables
RT air data systems
astronomical catalogs
∞ data
data acquisition
data management
data processing
data recording
data reduction
data retrieval
printouts
statistical analysis
∞ statistics
∞ tabulation
tabulation processes

tablets
RT briquets
∞ capsules
molds

. tabs (control surfaces)
GS airfoils
. **tabs (control surfaces)**
control surfaces
. **tabs (control surfaces)**
RT aerial rudders
ailerons
∞ control
elevators (control surfaces)
elevons
rudders
stabilizers (fluid dynamics)
∞ surfaces

tabulating
USE **tabulation processes**

∞ **tabulation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT tables (data)
tabulation processes

tabulation processes
UF *tabulating*
RT data processing
data recording
tables (data)
∞ tabulation

Tacan
DEF A two dimensional navigation system which provides azimuth and distance to a fixed ground station for navigation in piloted aircraft. Used for tactical air navigation.
UF *tactical air navigation*
GS navigation
. radio navigation
. . **Tacan**
RT air navigation
all-weather air navigation
flight paths
navigation aids
radar navigation
solar compasses

tachistoscopes
RT visual perception

tachometers
GS display devices
. speed indicators

. . **tachometers**
measuring instruments
. indicating instruments
. . speed indicators
. . . **tachometers**
RT aircraft instruments
angular velocity
timing devices
velocity measurement

tachycardia
GS diseases
. **tachycardia**
rates (per time)
. heart rate
. . **tachycardia**

tachyons
GS particles
. elementary particles
. . **tachyons**

tachypnea
GS rates (per time)
. respiratory rate
. . **tachypnea**

tackiness
RT adhesion

TACT program
UF *Transonic Aircraft Technology Program*
GS programs
. NASA programs
. . **TACT program**
RT ∞ aeronautics
∞ aircraft

tactical air navigation
USE **Tacan**

tactics
RT attacking (assaulting)
deployment
evasive actions
military operations
military technology
obstacle avoidance

tactile discrimination
GS discrimination
. sensory discrimination
. . **tactile discrimination**
perception
. sensory perception
. . touch
. . . **tactile discrimination**
RT tactile sensors (robotics)

tactile sensation
USE **touch**

tactile sensors (robotics)
(added January 1991)
GS robot sensors
. **tactile sensors (robotics)**
RT end effectors
manipulators
robots
∞ sensors
servomechanisms
tactile discrimination
teleoperators
touch

Tafel law
GS laws
. **Tafel law**
RT electrodes
electrolysis
Ficks equation
polarization (charge separation)

tagging
USE **marking**

TAGN
UF *triaminoguanidinenitrate*
GS oxidizers
. rocket oxidizers
. . **TAGN**
propellants
. rocket propellants
. . **TAGN**
RT explosives

tail assemblies
DEF The rear part of a body, as of an aircraft or a rocket. The tail surfaces of an aircraft or rocket. Used for empennage, tail mountings, tails (assemblies), and vertical tails.
UF *empennage*
tail mountings
tails (assemblies)
vertical tails
GS assemblies
. **tail assemblies**
. . horizontal tail surfaces
. . sweptback tail surfaces
. . swing tail assemblies
. . T tail surfaces
. . trapezoidal tail surfaces
RT aerial rudders
afterbodies
aircraft parts
aircraft structures
airfoils
airframes
boattails
body–wing and tail configurations
∞ boom
control surfaces
elevators (control surfaces)
fins
hydrofoils
marine rudders
missile structures
rudders
sails
stabilizers (fluid dynamics)
vanes

tail mountings
USE **tail assemblies**

tail planes
USE **horizontal tail surfaces**

tail rotors
GS rotating bodies
. rotors
. . **tail rotors**
. . . helicopter tail rotors
RT helicopter control
rotary wings
∞ rotor blades

tail surfaces
GS **tail surfaces**
. horizontal tail surfaces
. sweptback tail surfaces
. T tail surfaces
. trapezoidal tail surfaces
RT control surfaces
elevators (control surfaces)
rudders
stabilizers (fluid dynamics)
∞ surfaces

tailless aircraft
UF *flying wing aircraft*
GS **tailless aircraft**
. AVRO 707 aircraft
. B–58 aircraft
. F–102 aircraft
. F–106 aircraft
. FD 2 aircraft
. HP–115 aircraft
. Mirage 3 aircraft
. SC–1 aircraft
. Vulcan aircraft
. X–36 aircraft
RT ∞ aircraft
jet aircraft
∞ low wing aircraft
∞ military aircraft
monoplanes
research aircraft

tailoring
USE **design**

tails (assemblies)
USE **tail assemblies**

Taiwan
UF *Republic of China*
GS nations
. **Taiwan**
RT Asia
China
Chinese space program
Chinese spacecraft
Hong Kong

Tajikistan
(added August 1993)
GS nations
. **Tajikistan**
RT Asia

takeoff
DEF The action of a rocket vehicle departing from its launch pad. The action of an aircraft as it becomes airborne.
GS **takeoff**
. vertical takeoff
RT air traffic control
aircraft landing
ascent
climbing flight
JATO engines
landing
maneuvers
runways

takeoff runs
RT aircraft performance
distance
runway alignment
short takeoff aircraft

takeoff systems
USE **aircraft launching devices**

talc
UF *steatite*
GS magnesium compounds
. **talc**
minerals
. **talc**
silicon compounds
. silicates
. . sodium silicates
. . . **talc**
sodium compounds
. sodium silicates
. . **talc**

talking
GS speech
. **talking**
RT sentences
signal transmission

Talon aircraft
USE **T-38 aircraft**

Talos missile
GS missiles
. surface to air missiles
. . **Talos missile**
RT Bumblebee project
liquid propellant rocket engines
multistage rocket vehicles
solid propellant rocket engines

tandem mirrors
GS mirrors
. magnetic mirrors
. . **tandem mirrors**
RT fusion reactors
mirror fusion
plasma control
thermal barriers (plasma control)

tandem rotor helicopters
GS V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **tandem rotor helicopters**
. . . . CH-46 helicopter
. . . . CH-47 helicopter
. . . . H-25 helicopter
RT ∞ aircraft

tandem wing aircraft
DEF An aircraft configuration having two wings of similar span, mounted in tandem.
GS **tandem wing aircraft**
. X-19 aircraft
. X-22A aircraft
RT ∞ aircraft
biplanes
canard configurations
dual wing configurations
jet aircraft
joined wings
research aircraft
∞ subsonic aircraft
X-22 aircraft

tangential blowing
(added October 1996)
GS blowing
. **tangential blowing**
RT boundary layer control
chords (geometry)
circulation control airfoils
jet flaps
lift augmentation
spanwise blowing
wing slots

tangents
GS analysis (mathematics)
. real variables
. . periodic functions
. . . trigonometric functions
. . . . **tangents**
functions (mathematics
. transcendental functio
. . periodic functions
. . . trigonometric functi
. . . . **tangents**
geometry
. Euclidean geometry
. . analytic geometry
. . . **tangents**
RT chords (geometry)

tangling
RT confusion
entrapment
mixing

tank geometry
GS geometry
. **tank geometry**
RT liquid sloshing
propellant tanks
storage tanks
tanks (containers)
ullage

tank trucks
GS surface vehicles
. motor vehicles
. . trucks
. . . **tank trucks**
RT ∞ tankers
trailers

tanker aircraft
GS transport aircraft
. **tanker aircraft**
RT air to air refueling
∞ aircraft
aircraft fuels
bomber aircraft
fuel tanks
∞ military aircraft
∞ tankers
Valiant aircraft

tanker ships
GS surface vehicles
. cargo ships
. . **tanker ships**
water vehicles
. ships
. . cargo ships
. . . **tanker ships**
RT artificial harbors
deepwater terminals
harbors
marine transportation
offshore docking
offshore platforms
shipyards
∞ tankers
wharves

tanker terminals
RT artificial harbors
cargo ships
deepwater terminals
marine technology
oceanography
offshore docking
offshore platforms
ship terminals
∞ tankers
terminal facilities
transportation

∞ **tankers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT artificial harbors
deepwater terminals
offshore docking
offshore platforms
tank trucks
tanker aircraft
tanker ships
tanker terminals
transportation energy

tanks (combat vehicles)
GS surface vehicles
. **tanks (combat vehicles)**
RT armed forces
military operations
∞ military vehicles
ordnance
∞ vehicles
weapons

tanks (containers)
GS **tanks (containers)**
. bunkers (fuel)
. cylindrical tanks
. external tanks
. fuel tanks
. . wing tanks
. propellant tanks
. spherical tanks
. storage tanks
RT basins (containers)
bottles
chemical reactors
∞ containers
drums (containers)
fluid filled shells
liquid filled shells
materials handling
pipe nozzles
pressure vessels
receivers
∞ structures
tank geometry
towers
wing-fuselage stores

tantalum
GS chemical elements
. **tantalum**
. . tantalum isotopes
metals
. refractory metals
. . **tantalum**
. . . tantalum isotopes
. transition metals
. . **tantalum**
. . . tantalum isotopes
refractory materials
. refractory metals
. . **tantalum**
. . . tantalum isotopes

tantalum alloys
GS alloys
. heat resistant alloys
. . refractory metal alloys
. . . **tantalum alloys**
refractory materials
. refractory metal alloys
. . **tantalum alloys**
RT hafnium alloys

tantalum carbides
GS carbon compounds
. carbides
. . **tantalum carbides**
tantalum compounds
. **tantalum carbides**

tantalum compounds
GS **tantalum compounds**
. tantalum carbides
. tantalum nitrides

. tantalum oxides
RT ∞ chemical compounds
Group 5B compounds
∞ metal compounds

tantalum isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **tantalum isotopes**
. tantalum
. . **tantalum isotopes**
metals
. refractory metals
. . tantalum
. . . **tantalum isotopes**
. transition metals
. . tantalum
. . . **tantalum isotopes**
refractory materials
. refractory metals
. . tantalum
. . . **tantalum isotopes**

tantalum nitrides
GS nitrogen compounds
. nitrides
. . metal nitrides
. . . **tantalum nitrides**
tantalum compounds
. **tantalum nitrides**

tantalum oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **tantalum oxides**
tantalum compounds
. **tantalum oxides**

Tanzania
GS nations
. **Tanzania**
RT Africa

tape recorders
UF *magnetic tape recorders*
GS recording instruments
. **tape recorders**
. . video tape recorders
RT data recorders
electronic recording systems
magnetic tape transports
magnetic tapes
∞ recorders
recording heads

taper
USE **tapering**

tapered columns
GS structural members
. columns (supports)
. . **tapered columns**

tapered wings
USE **swept wings**

tapering
UF taper
RT convergence
deceleration
∞ reduction

∞ **tapes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT adhesives
audio tapes
computer compatible tapes
fasteners
heat tapes
magnetic tapes
plastic tapes
playbacks
punched tapes
ribbons
seals (stoppers)
splicing
video tapes

tapes
RT cutters
drills
machine tools
tools

tar sands
GS resources
. Earth resources
. . **tar sands**
sediments
. sands
. . **tar sands**
soils
. sands
. . **tar sands**
RT distillation
oil exploration
oil fields
oils
tars

TARE (data reduction)
USE **data reduction**

target acquisition
DEF The process of optically, manually, mechanically, or electronically orienting tracking systems in the direction and range to lock on a target.
GS acquisition
. **target acquisition**
RT detection
high alt target and background measurement
MATTS (systems)
missile detection
moving target indicators
multiple target tracking
sound ranging
surveillance
targets

target drone aircraft
GS drone vehicles
. drone aircraft
. . **target drone aircraft**
. . . Firebee 2 target drone aircraft
. . . Jindivik target aircraft
pilotless aircraft
. drone aircraft
. . **target drone aircraft**
. . . Firebee 2 target drone aircraft
. . . Jindivik target aircraft
RT ∞ aircraft
∞ military aircraft
remotely piloted vehicles
targets

target masking
DEF Technique used in vision contrast discrimination testing involving the ratio of the luminance of a target (object) to the luminance of the background, especially when light and dark adaptation are factors.
GS masking
. **target masking**
RT countermeasures
targets

target penetration
USE **terminal ballistics**

target recognition
GS detection
. **target recognition**
recognition
. **target recognition**
RT discrimination
laser target designators
missile detection
missile signatures
multiple target tracking
multistatic radar
nap-of-the-earth navigation
radar homing missiles
radar signatures
signature analysis
signatures
surveillance
targets
TRADEX radar system

target simulators
GS simulators
. **target simulators**
RT computerized simulation
display devices

target thickness
GS dimensions
. **target thickness**
RT particle accelerator targets
targets
thickness

target tracking
USE **tracking (position)**

targets
DEF Objects or points toward which something is directed. Objects which reflect a sufficient amount of a radiated signal to produce an echo signal on detection equipment. Used for towed targets.
UF *towed targets*
GS **targets**
. Jindivik target aircraft
. laser targets
. particle accelerator targets
. radar targets
. . radar target scatter site program
RT Airborne Integrated Reconnaissance System
command and control
detection
Firebee 2 target drone aircraft
irradiation
laser target designators
laser target interactions
line of sight
microballoons
∞ missions
multiple target tracking
radar echoes
Sandpiper target missile
surveillance
target acquisition
target drone aircraft
target masking
target recognition
target thickness

tars
GS products
. petroleum products
. . **tars**
RT asphalt
gums (substances)
pitch (material)
tar sands

tartar missile
GS missiles
. antiaircraft missiles
. . **tartar missile**
. surface to air missiles
. . **tartar missile**
RT AJ-10 engine
Bumblebee project
solid propellant rocket engines

task complexity
GS complexity
. **task complexity**
RT costs
∞ performance
quality control
scheduling

task planning (robotics)
(added December 1990)
GS planning
. **task planning (robotics)**
RT robotics
robots
scheduling
tasks
teleoperators
telerobotics

tasks
UF *jobs*
GS **tasks**
. auditory tasks
. visual tasks
RT costs
crew procedures (inflight)
crew procedures (preflight)
∞ elements
matrix management
physical work
projects
quality control
retraining
scheduling
task planning (robotics)
∞ tests

Tasmania
GS landforms
. islands
. . **Tasmania**
RT Australia

taste
UF *gustatory perception*
GS perception
. sensory perception
. . **taste**
RT chemoreceptors
synthetic food

TATB
UF *triaminotrinitrobenzene*
GS explosives
. **TATB**
propellants
. rocket propellants
. . **TATB**
RT rocket oxidizers

Taurid meteoroids
GS celestial bodies
. meteoroid showers
. . **Taurid meteoroids**
. meteoroids
. . **Taurid meteoroids**

Taurus constellation
GS constellations
. **Taurus constellation**
RT Crab nebula
Pleiades cluster
T Tauri stars

tautomers
RT congeners
isomers

taxiing
RT air traffic control
airfield surface movements
runways

taxonomy
RT classifications
∞ classifying
∞ science
∞ zoology

Taylor instability
RT density distribution
Goertler instability
interface stability
perturbation theory
rotating fluids
two dimensional flow

Taylor manifest anxiety scale
RT anxiety
physiological tests
psychological effects
psychological tests

Taylor series
UF *Taylor theorem*
GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . power series
. . . . **Taylor series**
. . . . . MacLaurin series
. real variables
. . series (mathematics)
. . . power series
. . . . **Taylor series**
. . . . . MacLaurin series
RT theorems

Taylor theorem
USE **Taylor series**

Taylor-Goertler instability
USE **Goertler instability**

TCG (tracking)
USE **transponder control group**

TCV program
USE **Terminal Configured Vehicle Program**

TD satellites
GS artificial satellites
. ESA satellites
. . **TD satellites**
. . . TD-1 satellite
. synchronous satellites
. . **TD satellites**
. . . TD-1 satellite
ESA spacecraft
. ESA satellites
. . **TD satellites**
. . . TD-1 satellite

TD-1 satellite
GS artificial satellites
. ESA satellites
. . TD satellites
. . . **TD-1 satellite**
. synchronous satellites
. . TD satellites
. . . **TD-1 satellite**
ESA spacecraft
. ESA satellites
. . TD satellites
. . . **TD-1 satellite**

TDMA
USE **time division multiple access**

TDR satellites
DEF Orbiting communications satellites, developed by NASA to relay data from satellite sensors to groundstations and to track the satellites in orbit.
UF *Tracking and Data Relay Satellites*
RT autonomous spacecraft clocks
communicating
data transmission
radio relay systems
satellite networks
satellite transmission
telecommunication
telemetry

TEA lasers
UF *transversely excited atmospheric lasers*
GS stimulated emission devices
. lasers
. . gas lasers
. . . **TEA lasers**
RT atmospheric lasers
carbon dioxide lasers
carbon monoxide lasers
chemical lasers
gas masers
HF lasers
laser modes
pulsed lasers
stimulated emission

teachers
USE **instructors**

teaching
USE **education**

teaching machines
GS training devices
. **teaching machines**
RT learning
machine learning
∞ machinery

teams
RT bureaus (organizations)
federations
institutions
organizations
projects
university program

tearing
RT mechanical properties

rupturing
shredding

tearing modes (plasmas)
DEF Explosive reconnections of energetic particle accelerations at high voltages in the magnetosphere during substorms.
RT ballooning modes
modes
plasmas (physics)

technetium
GS chemical elements
. **technetium**
metals
. transition metals
. . **technetium**

technetium compounds
GS **technetium compounds**
. technetium fluorides
RT ∞ chemical compounds
Group 7B compounds
∞ metal compounds

technetium fluorides
GS halogen compounds
. fluorine compounds
. . **fluorides**
. . . **technetium fluorides**
. halides
. . fluorides
. . . **technetium fluorides**
. metal halides
. . . **technetium fluorides**
technetium compounds
. . **technetium fluorides**

technetium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **technetium isotopes**
metals
. transition metals
. . **technetium isotopes**

technical writing
RT abstracts
documentation
editing
records
specifications
translating

techniques
USE **methodology**

technological forecasting
GS forecasting
. **technological forecasting**
. . Delphi method (forecasting)
. . pattern method (forecasting)
. . probe method (forecasting)
. . profile method (forecasting)
RT aerospace technology transfer
estimating
predictions
technology transfer

technologies
GS **technologies**
. biotechnology
. bubble technique
. energy technology
. . geothermal technology
. marine technology
. military technology
. reactor technology
. small satellite technology
RT industries
low gravity manufacturing
manufacturing
nucleonics
space manufacturing
technology assessment
technology utilization
urban development

technology assessment
GS assessments
. **technology assessment**
RT Canadian space program
Communications Technology Satellite
Delphi method (forecasting)
evaluation
feasibility analysis
industries
manufacturing
pattern method (forecasting)
probe method (forecasting)
profile method (forecasting)
strategic materials
technologies
value

technology feasibility spacecraft
GS unmanned spacecraft
. **technology feasibility spacecraft**
RT scientific satellites
∞ spacecraft

technology transfer
DEF The process of converting scientific findings from research laboratories and governmental activities into commercially viable products.
GS **technology transfer**
. aerospace technology transfer
RT commercialization
communicating
communication
documentation
documents
information flow
information management
information transfer
reports
selective dissemination of information
space commercialization
Stansite program
technological forecasting
technology utilization
transferring

technology utilization
GS utilization
. **technology utilization**
RT aerospace technology transfer
Canadian space program
Communications Technology Satellite
control configured vehicles
general overviews
Indian space program
industries
information transfer
laser applications
manufacturing
NASA programs
patent applications
research and development
Synchronous Earth Observatory satellite
technologies
technology transfer

tectonic movement
USE **tectonics**

tectonics
DEF A branch of geology dealing with the broad architecture of the upper part of the Earth's crust, that is, the regional assembling of structural or deformational features, a study of their mutual relations, their origin, and their historical evolution. Used for tectonic movement.
UF *tectonic movement*
GS geology
. **tectonics**
RT asthenosphere
core-mantle boundary
∞ depression
Earth movements
Earth planetary structure
fissures (geology)
geophysics
plates (tectonics)
sea floor spreading
subduction (geology)

TED
USE **transferred electron devices**

Tedlar (trademark)
USE **polyvinyl fluoride**

tee
USE **T shape**

teetering
RT ∞ motion

teeth
SN (EXCLUDES GEAR TEETH AND OTHER MECHANICAL DEVICES)
GS anatomy
. **digestive system**
. . **teeth**
RT dental calculi
dentistry
mastication
mouth
oral hygiene
tooth diseases

teflon (trademark)
GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . difluoro compounds
. . . . polytetrafluoroethylene
. . . . . **teflon (trademark)**
. . fluorine organic compounds
. . . fluorohydrocarbons
. . . . polytetrafluoroethylene
. . . . . **teflon (trademark)**
. . . fluoropolymers
. . . . polytetrafluoroethylene
. . . . . **teflon (trademark)**
organic compounds
. fluorine organic compounds
. . fluorohydrocarbons
. . . polytetrafluoroethylene
. . . . **teflon (trademark)**
. . fluoropolymers
. . . polytetrafluoroethylene
. . . . **teflon (trademark)**
. hydrocarbons
. . fluorohydrocarbons
. . . polytetrafluoroethylene
. . . . **teflon (trademark)**
plastics
. polytetrafluoroethylene
. . **teflon (trademark)**
RT ∞ polymers
resins
synthetic resins

Tektite project
GS programs
. NASA programs
. . NASA space programs
. . . **Tektite project**
. space programs
. . NASA space programs
. . . **Tektite project**

tektites
DEF Small glassy bodies containing no crystals, composed of at least 65 percent silicon dioxide, bearing no relation to the geological formations in which they occur, and believed to be of extraterrestrial origin.
GS celestial bodies
. meteorites
. . stony meteorites
. . . **tektites**
. . . . australites
. . . . bediasites
RT chondrites
coesite
Cyrillid meteoroids
meteoritic composition
meteoritic microstructures
micrometeorites
natural satellites

telechirics
USE **remote handling**

telecommunication
DEF Any transmission, emission, or reception of signs, signals, writings, images, sounds, or information of any nature by wire, radio, visual, or electromagnetic systems.
UF *communication systems*
GS **telecommunication**
. aircraft communication
. broadcasting
. closed circuit television
. color television
. communication
. . facsimile communication
. . . automatic picture transmission
. line of sight communication
. optical communication
. ship to shore communication
. underwater communication
. voice communication
. . telephony
. data links
. Defense Communications Satellite System
. . Fleet Satellite Communication System
. defense communications system (DCS)
. educational television
. electronic mail
. ground–air–ground communication
. HET experiment
. multichannel communication
. multiple access
. . Aloha system
. . code division multiple access
. . demand assignment multiple access
. . frequency division multiple access
. . time division multiple access
. packet transmission
. . Aloha system
. PLAT system
. pulse communication
. . digital spacecraft television
. radio communication
. . radio relay systems
. . . code division multiple access
. . . time division multiple access
. . radio telegraphy
. . radio telemetry
. . . pulse frequency modulation telemetry
. . telephony
. radiotelephones
. single channel per carrier transmission
. space communication
. . extraterrestrial communication
. . interplanetary communication
. . lunar communication
. . . circumlunar communication
. . spacecraft communication
. . . reentry communication
. . . satellite communication
. spacecraft antennas
. spacecraft television
. . digital spacecraft television
. . Ranger block 3 television system
. . satellite television
. stereotelevision
. telemetry
. . biotelemetry
. . P.A.C.M. telemetry
. . PCM telemetry
. . radio telemetry
. . . pulse frequency modulation telemetry
. telemedicine
. transoceanic communication
. video communication
. wideband communication
. wireless communication
RT access control
antennas
ARPA computer network
automatic repeat request
∞ channels
code division multiplexing
communicating
communication networks
communication satellites
computers
data compression
data processing
data sampling
data transmission
demodulation
∞ detectors
digital systems
direct broadcast satellites
electromagnetic radiation
frequency division multiplexing
information theory
INMARSAT satellites
interfaces
interphones
modulation
Molniya satellites
Morse code
NASCOM network
networks
onboard equipment
packet switching
point to point communication
satellite antennas
Seafarer project
signal detection
signal detectors
signal encoding
signal transmission
∞ signals
∞ systems
TDR satellites
teleconferencing
telegraph systems
teletypewriter systems
television systems
transcontinental systems
transmission
transmission circuits
transmission lines
transmission rate (communications)
transmitters
transoceanic systems
video data
VSAT (network)
Westar satellites
wide area networks

teleconferencing
GS **teleconferencing**
. computer conferencing
. HET experiment
RT communication satellites
conferences
multichannel communication
multimedia
satellite networks
telecommunication
telemedicine

teleconnections (meteorology)
DEF Statistically significant temporal correlations between meteorological parameters at widely separated points.
RT climatology
correlation
data correlation
Earth atmosphere
meteorological parameters
meteorology
secular variations
significance
spatial distribution
statistical analysis
statistical correlation
synoptic meteorology
temporal distribution

telegraph systems
UF *telegraphy*
RT pulse communication
radio communication
single channel per carrier transmission
∞ systems
telecommunication
teleprinters
teletypewriters
Westar satellites

telegraphy
USE **telegraph systems**

telemedicine
(added May 1997)
DEF The use of telecommunication technologies as a medium for providing medical services (diagnostic, therapeutic, education, and research) by health care professionals to sites that are remote from the provider.
GS telecommunication
. **telemedicine**
RT aerospace medicine
biotelemetry
diagnosis
medical electronics
medical equipment
medical science
medical services

teleconferencing

telameters
USE **telemetry**

telemetry
DEF The science of measuring a quantity or quantities, transmitting the results to a distant station, and there interpreting, indicating, and/or recording the quantities measured. Used for telemeters.
UF *telemeters*
GS **telecommunication**
. **telemetry**
. . biotelemetry
. . P.A.C.M. telemetry
. . PCM telemetry
. . radio telemetry
. . . pulse frequency modulation telemetry
transmission
. signal transmission
. . **telemetry**
. . . biotelemetry
. . . P.A.C.M. telemetry
. . . PCM telemetry
. . . radio telemetry
. . . . pulse frequency modulation telemetry
RT Advanced Range Instrumentation Aircraft
communication equipment
data compression
data links
data retrieval
data transmission
decommutators
differential pulse code modulation
in-flight monitoring
measuring instruments
pulse communication
radio communication
ship to shore communication
signal processing
single channel per carrier transmission
spiral antennas
TDR satellites
time division multiplexing
trajectory measurement
transponder control group
weather data recorders
wireless communication

teleoperator maneuvering system
USE **teleoperators**

teleoperators
DEF Remotely controlled mobility modules which incorporate sensory and manipulative subsystems for the purpose of extending the human operators skills and cognitive capabilities into hostile or remote environments.
UF *teleoperator maneuvering system*
GS control equipment
. **teleoperators**
RT human factors engineering
man machine systems
manipulators
remote control
remote handling
robotics
tactile sensors (robotics)
task planning (robotics)
telerobotics
torque sensors (robotics)

telephones
GS **telephones**
. radiotelephones
RT earphones
telephony
utilities

telephony
GS telecommunication
. communication
. . voice communication
. . . **telephony**
. radio communication
. . **telephony**
transmission
. **telephony**
RT communication equipment
crosstalk
echo suppressors
radiotelephones
single channel per carrier transmission
sound transmission
Symphonie satellites
telephones
verbal communication

telephotometers
USE **telephotometry**

telephotometry
DEF The body of principles and techniques concerned with measuring atmospheric extinction using various types of telephotometers. Used for telephotometers.
UF *telaphotometers*
GS optical measurement
. photometry
. . **telephotometry**
RT astronomical photometry
optical measuring instruments
photometers
transmissometers

teleprinters
GS printers
. **teleprinters**
typewriters
. teletypewriters
. . **teleprinters**
RT keying
printers (data processing)
receivers
telegraph systems

telerobotics
(added December 1990)
GS robotics
. **telerobotics**
RT manipulators
orbital servicing
remote control
robot dynamics
robots
space tools
task planning (robotics)
teleoperators

Telesat Canada 3
USE **Anik 3**

Telesat Canada A
USE **Anik 1**

Telesat Canada B
USE **Anik 2**

Telesat Canada C
USE **Anik 3**

telescopes
UF *astronomical telescopes*
GS **telescopes**
. celescopes
. circumsolar **telescopes**
. gamma ray **telescopes**
. grazing incidence telescopes
. . GRIST (telescope)
. heliometers
. . pyroheliometers
. infrared telescopes
. . Large Deployable Reflector
. . Space Infrared Telescope Facility
. manned orbital telescopes
. . Apollo telescope mount
. particle telescopes
. radio **telescopes**
. . kilometer wave orbiting telescope
. . Very Large Array (VLA)
. . Very Long Baseline Array (VLBA)
. reflecting telescopes
. . Large Deployable Reflector
. . Starsat telescope
. refracting telescopes
. Schmidt telescopes
. spaceborne **telescopes**
. . German Infrared Laboratory
. . Hubble Space Telescope
. . Infrared Space Observatory (ISO)
. . Large Deployable Reflector
. . LIRTS (telescope)
. . solar optical telescope
. . Space Infrared Telescope Facility
. . Starlab
. . Starsat telescope
. . X Ray Astrophysics Facility
. spectroscopic **telescopes**
. . multispectral tracking telescopes
. . stratoscope telescopes
. ultraviolet telescopes
. . Starlab
. x ray telescopes
. . X Ray Astrophysics Facility
RT antennas
astronomical observatories
astronomy
balloon-borne instruments
binoculars
Cassegrain optics
coronagraphs
etalons
eyepieces
lenses
mirrors
multi-anode microchannel arrays
optical equipment
optical measuring instruments
optical transfer function
periscopes
reflectors
Schmidt cameras
seeing (astronomy)
solar instruments
spaceborne astronomy
ultraviolet astronomy

telescoping structures
USE **folding structures**

Telesto
(added January 1996)
DEF A natural satellite of Saturn orbiting at a mean distance of 294,660 kilometers.
GS celestial bodies
. natural satellites
. . Saturn satellites

. . **Telesto**
RT Saturn (planet)

teletypewriter systems
RT facsimile communication
microwave transmission
∞ systems
telecommunication
teletypewriters

teletypewriters
GS typewriters
. **teletypewriters**
. . teleprinters
RT keying
receivers
telegraph systems
teletypewriter systems

television cameras
GS optical equipment
. cameras
. . **television cameras**
photographic equipment
. cameras
. . **television cameras**
television equipment
. **television cameras**
RT camera tubes
closed circuit television
Lallemand cameras
optical scanners
orthicons
raster scanning
return beam vidicons
satellite television

television equipment
GS **television equipment**
. image dissector tubes
. monoscopes
. television cameras
. television receivers
RT cathode ray tubes
diplexers
∞ equipment
flying spot scanners
orthicons
picture tubes
video equipment

television receivers
GS receivers
. **television receivers**
television equipment
. **television receivers**
RT closed circuit television
tuners

television reception
GS signal reception
. **television reception**
RT color television
radio receivers
radio reception
∞ receiving

television systems
GS **television systems**
. Advanced Vidicon Camera System (AVCS)
. cable television
. closed circuit television
. color television
. digital television
. . digital spacecraft television
. educational television
. . high definition television
. PLAT system
. spacecraft television
. . digital spacecraft television
. . Ranger block 3 television system
. . satellite television
. stereotelevision
RT communication equipment
Earth terminals
facsimile communication
imaging techniques
orbit spectrum utilization
radio communication
space communication
∞ systems
telecommunication
video communication
video data

television transmission
GS transmission
. electromagnetic wave transmission
. . **television transmission**
. signal transmission
. . **television transmission**
RT automatic picture transmission
cable television
closed circuit television
color television
digital television
direct broadcast satellites
double sideband transmission
high definition television
line of sight communication
Molniya satellites
radio transmitters
satellite television
satellite transmission
single sideband transmission
smear
spacecraft television
sweep frequency
time division multiplexing
transmitters
wave propagation

Tellegen theory
USE **gyrators**
network analysis
network synthesis

telluric currents
DEF Large scale surges of electric charges within the Earth's crust, associated with disturbances of the ionosphere. Used for earth currents.
UF *Earth currents*
GS electric current
. **telluric currents**
electricity
. geoelectricity
. . **telluric currents**
RT atmospheric electricity
auroral electrojets
dynamo theory
field aligned currents
geomagnetic micropulsations

telluric lines
DEF Absorption lines in a solar spectrum produced by constituents of of the atmosphere of the Earth itself rather than by gases in the outer solar atmosphere such as those responsible for the Fraunhofer lines.
GS spectra
. radiation spectra
. . absorption spectra
. . . **telluric lines**
. electromagnetic spectra
. . line spectra
. . . **telluric lines**
. spectral bands
. . absorption spectra
. . . **telluric lines**
RT H lines

tellurides
GS chalcogenides
. **tellurides**
. . bismuth tellurides
. . cadmium tellurides
. . indium tellurides
. . lanthanum tellurides
. . lead tellurides
. . mercury tellurides
. . . mercury cadmium tellurides
. . tin tellurides
. . zinc tellurides
tellurium compounds
. **tellurides**
. . bismuth tellurides
. . cadmium tellurides
. . indium tellurides
. . lanthanum tellurides
. . lead tellurides
. . mercury tellurides
. . . mercury cadmium tellurides
. . tin tellurides
. . zinc tellurides
RT intermetallics

tellurium
GS chemical elements
. metalloids
. . **tellurium**
. . . tellurium isotopes
. nuclides
. . isotopes
. . . **tellurium**
. . . . tellurium isotopes

tellurium 119
USE **tellurium isotopes**

tellurium alloys
GS alloys
. **tellurium alloys**

tellurium compounds
GS **tellurium compounds**
. tellurides
. . bismuth tellurides
. . cadmium tellurides
. . indium tellurides
. . lanthanum tellurides
. . lead tellurides
. . mercury tellurides
. . . mercury cadmium tellurides
. . tin tellurides
. . zinc tellurides
RT ∞ chemical compounds
Group 6A compounds

tellurium isotopes
UF *tellurium 119*
GS chemical elements
. metalloids
. . tellurium
. . . **tellurium isotopes**
. nuclides
. . isotopes
. . . tellurium
. . . . **tellurium isotopes**

tellurometers
GS measuring instruments

. . distance measuring equipment
. . . **telluriometers**
RT geodimeters
range finders

Telstar 1 satellite
GS artificial satellites
. Telstar satellites
. . **Telstar 1 satellite**

Telstar 2 satellite
GS artificial satellites
. Telstar satellites
. . **Telstar 2 satellite**

Telstar project
GS programs
. projects
. . **Telstar project**
RT artificial satellites
communication satellites
Comsat program

Telstar satellites
GS artificial satellites
. **Telstar satellites**
. . Telstar 1 satellite
. . Telstar 2 satellite
RT Comsat program
Thor Delta launch vehicle

TEM (microscopy)
USE **transmission electron microscopy**

Tempel 2 comet
DEF A comet for which a spacecraft rendezvous had been planned for 1988 because of its accessible orbit. It has been replaced by a planned spacecraft rendezvous with the Wild 2 comet in 1994.
GS celestial bodies
. comets
. . **Tempel 2 comet**
RT ∞ coma
meteoroids
solar system

temper (metallurgy)
RT cold working
ductility
hardness
heat treatment
tempering

temperate regions
UF *midlatitudes*
subtropical regions
GS regions
. **temperate regions**
RT climatology
geography
polar regions
tropical regions

temperature
DEF In general, the intensity of heat as measured on some definite temperature scale by means of any of various types of thermometers. In statistical mechanics, a measure of translational molecular kinetic energy (with three degrees of freedom). In thermodynamics, the integrating factor of the differential equation referred to as the first law of thermodynamics. Used for body temperature (non-biological).
UF *body temperature (non-biological)*
GS **temperature**
. absolute zero
. ambient temperature
. atmospheric temperature
. . auroral temperature
. . ionospheric temperature
. body temperature
. brightness temperature
. combustion temperature
. critical temperature
. Curie temperature
. flame temperature
. gas temperature
. glass transition temperature
. high temperature
. ignition temperature
. . flash point
. inlet temperature
. ion temperature
. low temperature
. . cryogenic temperature
. lunar temperature
. neel temperature
. noise temperature
. operating temperature
. planetary temperature
. plasma temperature
. room temperature
. satellite temperature
. skin temperature (biology)
. solar temperature
. space temperature
. spin temperature
. stagnation temperature
. stellar temperature
. subzero temperature
. surface temperature
. . land surface temperature
. . sea surface temperature
. . skin temperature (non-biological)
. . wall temperature
. transition temperature
. water temperature
. . ocean temperature
. . . sea surface temperature
RT ablative materials
adiabatic conditions
air conditioning
biological effects
climatology
comfort
convective flow
electron energy
emissivity
environments
free convection
geotemperature
Gibbs-Helmholtz equations
heat
heat shielding
heat storage
heating
humidity
isotherms
lapse rate
melting points
meteorology
ocean thermal energy conversion
refrigerating
Saha equations
surface cooling
temperature compensation
temperature control
temperature dependence
temperature distribution
temperature effects
temperature gradients
temperature inversions
temperature measurement
temperature measuring instruments
temperature probes
temperature profiles
temperature ratio
temperature scales
temperature sensors
tephigrams
thermal absorption
thermal analysis
thermal blooming
thermal boundary layer
thermal buckling
thermal comfort
thermal conductivity
thermal conductivity gages
thermal conductors
thermal control coatings
thermal cycling tests
thermal decomposition
thermal degradation
thermal diffusion
thermal diffusivity
thermal dissociation
thermal emission
thermal energy
thermal environments
thermal expansion
thermal fatigue
thermal instability
thermal insulation
thermal mapping
thermal neutrons
thermal noise
thermal plasmas
thermal pollution
thermal protection
thermal radiation
thermal reactors
thermal resistance
thermal resources
thermal shock
thermal simulation
thermal stability
thermal stresses
thermal vacuum tests
thermodynamic efficiency
thermodynamic properties
ventilation

temperature compensation
GS instrument compensation
. **temperature compensation**
RT ∞ compensation
temperature

temperature control
UF *heat regulation*
RT air conditioning
automatic control
automatic control valves
chemical reaction control
combustion control
∞ control
controllers
cooling
cooling systems
cryostats
engine control
environmental control
environmental engineering
exhaust systems
heat shielding
heating
heating equipment
high temperature tests
infrared suppression
low temperature tests
manual control

plasma cooling
refrigerating
refrigerating machinery
remote control
reusable heat shielding
space cooling (buildings)
space heating (buildings)
spacecraft temperature
temperature
thermal control coatings
thermal cycling tests
thermal insulation
thermometers
thermoregulation
thermostats
transpiration
ventilation
water heating

temperature dependence
DEF The characteristic of a material which is dependent on changes in the ambient temperature.
GS dependence
. **temperature dependence**
RT heat affected zone
hot corrosion
miscibility gap
temperature
temperature effects
thermal degradation
thermal stability

temperature differences
USE **temperature gradients**

temperature distribution
UF *temperature fields*
GS distribution (property)
. **temperature distribution**
RT air conditioning
cooling
cooling systems
environmental engineering
field theory (physics)
heat treatment
heating
isothermal flow
isothermal layers
isotherms
ocean temperature
refrigerating
satellite temperature
temperature
thermal mapping
thermal resources
thermal shock
thermal stresses
thermography
ventilation
vertical distribution
water temperature

temperature effects
UF *heat effects*
photothermotropism
Richardson–Dushman equation
thermal effects
thermotropism
RT ablation
absolute zero
chemical effects
∞ effects
Ettingshausen effect
glass transition temperature
heat affected zone
jet blast effects
magnetic effects
Nernst–Ettingshausen effect
Peltier effects
pressure effects
∞ radiation
reentry effects
Seebeck effect
shape memory alloys
solar granulation
sterilization effects
temperature
temperature dependence
thermal buckling
thermal degradation
thermal dissociation
thermal resistance
thermal stresses
thermogravimetry
thermoluminescence
thermophoresis
thermoplasticity
time temperature parameter

temperature fields
USE **temperature distribution**

temperature gradients
UF *temperature differences*
GS gradients
. **temperature gradients**
. . thermoclines
RT atmospheric temperature
bathythermographs
Chapman–Enskog theory
convective heat transfer
isothermal layers
isotherms
nonisothermal processes
ocean temperature
potential gradients
stratification
temperature
thermal analysis
thermal mapping
thermomigration
thermophoresis

temperature indicators
USE **indicating instruments**
temperature measuring instruments

temperature instruments
USE **temperature measuring instruments**

temperature inversions
GS inversions
. **temperature inversions**
RT air pollution
atmospheric temperature
bending
birefringence
buckling
cracking (fracturing)
cracks
creep properties
deflection
deformation
displacement
distortion
failure
fatigue (materials)
internal pressure
lapse rate
mechanical properties
meteorological parameters
meteorology
photoelastic analysis
plastic deformation
pressure
pressure effects
residual stress
Saint Venant principle
shear properties
shrinkage
strain gages
strain hardening
strain rate
stress analysis
stress relaxation
stress waves
stresses
structural strain
temperature
tensile deformation
∞ tension
tephigrams
torsion
volumetric strain
x ray stress analysis
yield strength

temperature measurement
UF *pyrometry*
thermometry
RT anomalous temperature zones
bolometers
brightness temperature
crayons
gas temperature
high temperature
in situ measurement
∞ measurement
noise temperature
nonintrusive measurement
pyrometers
radiation pyrometers
resistance thermometers
satellite temperature
sodar
sound detecting and ranging
temperature
thermocouple pyrometers
thermocouples
thermography
thermometers
wind tunnel calibration

temperature measuring instruments
UF *temperature indicators*
temperature instruments
thermograms
GS measuring instruments
. **temperature measuring instruments**
. . bathythermographs
. . optical pyrometers
. . pneumatic probes
. . pyrometers
. . . radiation pyrometers
. . . thermocouple pyrometers
. . temperature probes
. . thermometers
. . . resistance thermometers
RT anomalous temperature zones
bolometers
bomb calorimeters
calorimeters
drop calorimeters
flame calorimeters
flame probes
temperature
thermistors
thermocouples
thermopiles

thermostats
transducers

temperature probes
GS measuring instruments
. temperature measuring instruments
. . **temperature probes**
RT temperature
thermocouples

temperature profiles
RT heat transfer
temperature
thermal analysis

temperature ratio
GS ratios
. **temperature ratio**
RT data correlation
heat transfer
temperature

temperature scales
UF *fahrenheit temperature scale*
international practical temperature
RT absolute zero
anomalous temperature zones
calibrating
∞ scale
standards
temperature
thermometers

temperature sensors
GS **temperature sensors**
. thermistors
RT anomalous temperature zones
temperature

tempering
GS heat treatment
. **tempering**
RT annealing
∞ drawing
hardening (materials)
lasser annealing
metal working
normalizing (heat treatment)
stress relieving
stretching
temper (metallurgy)

templates
RT lofting
molds
∞ patterns

temporal distribution
DEF The statistical distribution based on time of phenomena, occurrences or events.
RT annual variations
spatial distribution
teleconnections (meteorology)
time dependence
∞ time response

temporal logic
(added October 1994)
DEF A logic that can express properties involving the sequencing of events in time.
RT discriminant analysis (statistics)
∞ logic
logic programming
mathematical logic
sequential analysis
temporal resolution

temporal resolution
DEF The precision with which an optical instrument or a system differentiates between time intervals. Used for multitemporal analysis.
UF *multitemporal analysis*
GS resolution
. **temporal resolution**
RT spatial resolution
temporal logic

tendencies
RT ∞ inclination

tendons
GS anatomy
. musculoskeletal system
. . muscles
. . . **tendons**
RT connective tissue
fibroblasts

tenite
RT cellulose
molding materials

Tenma satellite
(added June 1992)
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **Tenma satellite**
Japanese spacecraft
. **Tenma satellite**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Tenma satellite**
RT Japanese space program
x ray astronomy
x ray spectra
x ray stars

Tennessee
GS nations
. United States
. . **Tennessee**
RT Great Smoky Mountains (NC-TN)
Tennessee Valley (AL-KY-TN)

Tennessee Valley (AL-KY-TN)
GS valleys
. **Tennessee Valley (AL-KY-TN)**
RT Alabama
Kentucky
Tennessee

tensile creep
GS mechanical properties
. creep properties
. . **tensile creep**
RT plastic deformation
shear creep

tensile deformation
GS deformation
. **tensile deformation**
RT elastic deformation
elongation
plastic deformation
temperature inversions

tensile properties
GS mechanical properties
. **tensile properties**
. . tensile strength
RT elastic properties
high strength alloys
∞ properties

tensile strength
DEF The property of solid material that indicates its ability to withstand a uniaxial tensile load.
GS mechanical properties
. tensile properties
. . **tensile strength**
RT ductility
elastic properties
elongation
fiber strength
high strength
hysteresis
load carrying capacity
Poisson ratio
residual strength
resilience
shear strength
∞ strength
toughness

tensile stress
DEF Normal stress tending to lengthen the body in the direction in which it acts.
GS stresses
. **tensile stress**
RT axial stress
high strength
hoops
interfacial tension
stress intensity factors
∞ tension
triaxial stresses

tensile tests
RT destructive tests
fatigue tests
load tests
specimen geometry
static tests
∞ tests

tensiometers
GS measuring instruments
. **tensiometers**
RT cable force recorders
mechanical measurement

∞ **tension**
SN USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT blood pressure
interfacial tension
partial pressure
stretching
temperature inversions
tensile stress

tensometers
GS measuring instruments
. **tensometers**
RT deformeters
extensometers
strain gauges
stress measurement
weight indicators

tensor analysis
GS geometry
. differential geometry
. . **tensor analysis**
RT relativity
scalars
scalers
tensors

tensor fields
USE **tensors**

tensors
DEF Arrays of functions which obey certain laws of transformation. A one row or one column tensor array is a vector. Used for tensor fields and transformation tensors.
UF tensor fields
transformation tensors
GS algebra
tensors
stress tensors
RT field theory (physics)
Jordan form
scalars
tensor analysis

tephigrams
GS diagrams
tephigrams
RT atmospheric turbulence
entropy
lapse rate
temperature
temperature inversions
thermodynamic properties

terbium
GS chemical elements
rare earth elements
terbium
terbium isotopes
metals
rare earth elements
terbium
terbium isotopes
RT terbium compounds

terbium 155
USE **terbium isotopes**

terbium 161
USE **terbium isotopes**

terbium compounds
GS rare earth compounds
terbium compounds
RT terbium

terbium isotopes
UF *terbium 155*
terbium 161
GS chemical elements
nuclides
isotopes
terbium isotopes
rare earth elements
terbium
terbium isotopes
metals
rare earth elements
terbium
terbium isotopes

TERCOM
UF *Terrain Contour Matching Navigation System*
GS navigation aids
TERCOM
onboard equipment
airborne equipment
TERCOM
aircraft equipment
TERCOM
RT display devices
flight instruments
map matching guidance
navigation instruments
∞ systems
video landmark acquisition and tracking

terephthalate
GS **terephthalate**
polyethylene terephthalate
RT carboxylic acids
dicarboxylic acids

terminal area energy management
DEF Automated guidance and landing system for the Space Shuttle orbiter.
GS management
terminal area energy management
RT digital techniques
Space Shuttle orbiters
space transportation
spacecraft landing

terminal ballistics
DEF That branch of ballistics dealing with the motion and behavior of projectiles at the termination of their flight, or in striking and penetrating a target. Used for penetration ballistics, projectile penetration, and target penetration.
UF *penetration ballistics*
projectile penetration
target penetration
GS ballistics
terminal ballistics
RT energy transfer
fragmentation
impact velocity
missiles
penetration
precision guided projectiles
projectiles

Terminal Configured Vehicle Program
DEF NASA Program for determining configurations for short haul transport aircraft, including V/STOL and VTOL aircraft. Used for TCV program.
UF *TCV program*
GS programs
NASA programs
Terminal Configured Vehicle Program
RT aircraft design
automatic control
automatic flight control
automatic landing control
electronic control
feedback control
∞ vehicles

terminal facilities
GS **terminal facilities**
ship terminals
RT artificial harbors
deepwater terminals
∞ facilities
harbors
offshore docking
offshore platforms
site selection
tanker terminals
∞ terminals
transportation
wharves

terminal guidance
GS guidance (motion)
terminal guidance
laser guidance
RT command guidance
descent trajectories
entry guidance (STS)
glide paths
homing
inertial guidance
midcourse guidance
reentry
reentry guidance
reentry trajectories
reentry vehicles
rendezvous guidance
spacecraft guidance

terminal velocity
DEF The maximum velocity attainable, especially by a free falling body, under given conditions.
GS rates (per time)
terminal velocity
velocity
terminal velocity
RT gravitation
impact velocity

∞ **terminals**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT connectors
data processing terminals
electric terminals
∞ headers
jumpers
outlets
ship terminals
terminal facilities

terminating
USE **stopping**

terminator lines
RT ∞ lines
lunar phases
∞ phases
sunrise
sunset

terminology
RT abbreviations
dictionaries
nomenclatures
thesauri
words (language)

terms
RT information theory
thesauri
words (language)

ternary alloys
GS alloys
ternary alloys
Astroloy (trademark)
RT alloying
cluster variation method

ternary systems
RT alloys
binary systems (materials)
solid solutions
∞ systems

ternary systems (digital)
USE **digital systems**

terpenes
DEF A class of unsaturated organic compounds having the empirical formula C10H15 occurring in most essential oils and oleoresinous plants. Structurally the important terapenes and their derivatives are classified as monocyclic (dipentene), bicylic (pinene), and acyclyic (myrcene).
GS **terpenes**
azulene

. camphor
. mecamylamine
. menthol
. turpentine
RT aliphatic hydrocarbons
alkenes

terphenyls
GS phenyls
. **terphenyls**

terraces (landforms)
GS landforms
. **terraces (landforms)**
. . plateaus
. . . Allegheny Plateau (US)
. . . Colorado Plateau (US)
. . . Great Basin (US)
. . . mesas
. . . . buttes
. . . piedmonts
. . . . Central Piedmont (US)
RT formations
mountains

terradynamics
RT∞ dynamics
Earth surface
geodynamics
projectiles
sea floor spreading

terraforming
(added September 1993)
RT environmental engineering
exobiology
lunar bases
lunar environment
manned Mars missions
Mars (planet)
Mars environment
Mars surface
moon
planetary atmospheres
planetary environments
space colonies
space habitats
Venus surface

terrain
UF *landscape*
GS topography
. **terrain**
RT geomorphology
landforms
landmarks

terrain analysis
UF *SATAN (sensor)*
RT∞ analyzing
change detection
Earth resources
EROS (satellites)
geographic applications program
hologrammetry
mapping
multisensor fusion
nap-of-the-earth navigation
photogrammetry
reconnaissance
satellite surfaces
soil mapping
soil sampling
video landmark acquisition and tracking

Terrain Contour Matching Navigation System
USE **TERCOM**

terrain following
(added February 1995)
DEF The flight path of an aircraft, helicopter, or missile at a constant altitude above the terrain or highest obstacle. The altitude constantly changes to conform to the varying height of the terrain and/or obstacles.
GS maneuvers
. **terrain following**
navigation
. air navigation
. . nap-of-the-earth navigation
. . . **terrain following**
RT attack aircraft
cruise missiles
evasive actions
flight envelopes
hovering
low altitude
map matching guidance
military helicopters
obstacle avoidance
penetration

terrestrial dust belt
GS particles
. dust
. . **terrestrial dust belt**
RT∞ belts
cosmic dust
gegenschein
meteoroid dust clouds
micrometeoroids
zodiacal dust

terrestrial magnetism
USE **geomagnetism**

terrestrial planets
DEF The four small planets nearest the sun (Earth, Mercury, Venus, and Mars).
GS celestial bodies
. planets
. . **terrestrial planets**
. . . Earth (planet)
. . . Mars (planet)
. . . Mercury (planet)
. . . Venus (planet)
RT celestial mechanics
Mercury surface
planetary environments
planetology
solar system

terrestrial radiation
SN (EXCLUDES ATMOSPHERIC RADIATION AND REFLECTED VISIBLE LIGHT)
UF *Earth radiation*
GS electromagnetic radiation
. **terrestrial radiation**
RT atmospheric radiation
Earth (planet)
Earth albedo
Earth radiation budget
Earth radiation budget experiment
extraterrestrial radiation
far infrared radiation
greenhouse effect
infrared radiation
near infrared radiation
planetary radiation
∞ radiation
tropospheric radiation

terrier missile
GS missiles
. antiaircraft missiles
. . **terrier missile**
. surface to air missiles
. . **terrier missile**
RT Bumblebee project
multistage rocket vehicles
solid propellant rocket engines

Tertiary Period
(added June 1989)
GS Cenozoic Era
. **Tertiary Period**
RT Cretaceous Period
Cretaceous-Tertiary boundary
geochronology
paleontology

tesseral harmonics
GS analysis (mathematics)
. functional analysis
. . harmonic analysis
. . . **tesseral harmonics**
harmonics
. **tesseral harmonics**
RT satellite perturbation

test beds
USE **test stands**

test chambers
DEF Places, sections, or rooms having special characteristics where a person or object is subjected to experiment, as an altitude chamber. Used for environmental chambers.
UF *environmental chambers*
GS compartments
. **test chambers**
. . anechoic chambers
. . pressure chambers
. . . hyperbaric chambers
. . . vacuum chambers
. . reverberation chambers
RT∞ capsules
∞ chambers
cryogenic wind tunnels
environment models
environment simulators
environmental control
environmental laboratories
environmental tests
thermal vacuum tests
vacuum tests
wind tunnels

∞ **test equipment**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *checkout equipment*
testers
testing machines
RT analyzers
astronics
automatic test equipment
avionics
∞ capsules
CEFOAM checkout equipment
centrifuges
checkout
dynamometers
Earth terminal measurement system
electronic equipment tests
∞ equipment
fatigue testing machines
free flight test apparatus
frequency analyzers
geophysical fluid flow cells
ground support equipment
hypersonic test apparatus
impact testing machines

load testing machines
measuring instruments
monoscopes
onboard equipment
rocket propelled sleds
samplers
simulators
supersonic test apparatus
test facilities
test pattern generators
test stands
wind tunnel models
wind tunnels

test facilities
GS **test facilities**
. anechoic chambers
. Central Atlantic Regional Ecol Test Site
. engine testing laboratories
. environmental laboratories
. hydraulic test tunnels
. reverberation chambers
. rocket test facilities
. test ranges
. . ballistic ranges
. . missile ranges
. test stands
. Transient Reactor Test Facility
. wind tunnels
. . blowdown wind tunnels
. . combustion wind tunnels
. . cryogenic wind tunnels
. . hypersonic wind tunnels
. . . cascade wind tunnels
. . . hotshot wind tunnels
. . . plasma jet wind tunnels
. . . shock tunnels
. . hypervelocity wind tunnels
. . . cascade wind tunnels
. . . hotshot wind tunnels
. . . plasma jet wind tunnels
. . . shock tunnels
. . low density wind tunnels
. . low speed wind tunnels
. . . subsonic wind tunnels
. . rectangular wind tunnels
. . slotted wind tunnels
. . supersonic wind tunnels
. . transonic wind tunnels
. . trisonic wind tunnels
RT ∞ facilities
flight simulators
laboratories
models
motion simulators
research facilities
shock tubes
simulators
solar simulators
spacecraft cabin simulators
∞ test equipment
∞ tests

test firing
DEF The firing of a rocket engine, either live or static, with the purpose of making controlled observations of the engine or of an engine component.
GS firing (igniting)
. **test firing**
. . static firing
RT engine tests
fuel tests
ground tests
missile tests
prefiring tests
prelaunch tests
rocket firing
rocket test facilities
static tests
∞ tests

test pattern generators
DEF image-processing software.
RT ∞ faults
∞ generators
∞ patterns
∞ test equipment

test pilots
GS personnel
. flying personnel
. . pilots (personnel)
. . . aircraft pilots
. . . . **test pilots**
. operators (personnel)
. . pilots (personnel)
. . . aircraft pilots
. . . . **test pilots**
RT ∞ pilots

test ranges
GS ranges (facilities)
. **test ranges**
. . ballistic ranges
. . missile ranges
test facilities
. **test ranges**
. . ballistic ranges
. . missile ranges
RT downrange
downrange measurement
range safety
rocket test facilities

test stands
DEF Stationary platforms or tables, together with any testing apparatus attached thereto, for testing or proving engines or instruments.
UF *test beds*
GS test facilities
. **test stands**
RT engine tests
flame deflectors
prefiring tests
prelaunch tests
rocket test facilities
∞ test equipment

test vehicles
GS **test vehicles**
. flight test vehicles
RT ∞ aircraft
altitude tests
∞ ballistic vehicles
∞ capsules
electric motor vehicles
high altitude tests
hypersonic vehicles
launch vehicles
missile tests
missiles
reentry vehicles
research aircraft
rocket vehicles
∞ spacecraft
∞ tests
towed bodies
∞ vehicles

testers
USE **test equipment**

testes
GS anatomy
. genitourinary system
. . reproductive systems
. . . sex glands
. . . . gonads
. . . . . **testes**
. glands (anatomy)
. . endocrine glands
. . . gonads
. . . . **testes**
. . sex glands
. . . gonads
. . . . **testes**

testing
USE **tests**

testing machines
USE **test equipment**

testing time
GS time
. **testing time**
RT burning time
engine tests
fatigue tests
flight time
∞ tests
turnaround (STS)
windows (intervals)

∞ **tests**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *pretests*
testing
RT accelerated life tests
acceptability
accuracy
adhesion tests
altitude tests
approach and landing tests (STS)
bend tests
captive tests
checkout
chemical analysis
chemical tests
cold flow tests
cold weather tests
compression tests
computational chemistry
confidence limits
corrosion test loops
corrosion tests
creep tests
crew procedures (inflight)
crew procedures (preflight)
damping tests
destructive tests
drop tests
dynamic tests
education
electric equipment tests
electronic equipment tests
employment
engine tests
environmental tests
errors
evaluation
examination
extrapolation
fatigue tests
flight stability tests
flight tests
fuel tests
full scale tests

ground tests
hardness tests
high altitude tests
high temperature tests
impact tests
intelligence tests
laboratories
load tests
low temperature tests
lubricant tests
∞ materials tests
median (statistics)
missile tests
nondestructive tests
notch tests
orbital space tests
patch tests
performance tests
personality tests
physiological tests
prefiring tests
preflight analysis
prelaunch tests
program verification (computers)
propellant tests
proving
psychological tests
qualifications
quality
quality control
railroad humping tests
rank tests
reactor startup tests
records
reliability
resonance testing
Rorschach tests
salt spray tests
sampling
selection
self tests
shock tests
Snellen tests
space electric rocket tests
Space Transportation System flights
space vehicle checkout program
spin tests
stability tests
static tests
statistical tests
stroking tests
tasks
tensile tests
test facilities
test firing
test vehicles
testing time
thermal cycling tests
thermal vacuum tests
ultrasonic tests
vacuum tests
vibration tests
water tunnel tests
wear tests
weld tests
wind tunnel stability tests
wind tunnel tests
wing flow method tests
x ray inspection

tethered balloons
UF *kite balloons*
GS expandable structures
. inflatable structures
. . balloons
. . . **tethered balloons**
RT meteorological balloons
reels

tethered satellites
DEF Concept for scientific payloads suspended at altitudes of 120 km from Space Shuttle orbiters flying at 200-km altitude; control system would permit deployment and retrieval of the tethered satellites.
GS artificial satellites
. **tethered satellites**
RT reels

tethering
RT orbital rendezvous
reels
tetherlines

tetherlines
RT anchors (fasteners)
∞ cables
∞ lines
tethering
towed bodies
umbilical connectors

Tethys
DEF One of the natural satellites of Saturn orbiting at a mean distance of 295,000 kilometers.
GS celestial bodies
. natural satellites
. . icy satellites
. . . **Tethys**
. . Saturn satellites
. . . **Tethys**
RT Saturn (planet)

tetrabutyls
GS alkyl compounds
. **tetrabutyls**
RT dibutyl compounds
organometallic compounds

tetrachlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . **tetrachlorides**
. halides
. . chlorides
. . . **tetrachlorides**

tetrachloromethane
USE **carbon tetrachloride**

tetracyclines
GS drugs
. antibiotics
. . **tetracyclines**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **tetracyclines**

tetrad theory
RT chromosomes
miosis
spores
∞ theories

tetraethyl orthocarbonates
GS carbon compounds
. carbonates
. . **tetraethyl orthocarbonates**

tetraethyl orthosilicate
DEF An oxidation inhibiting coating used on the wing leading edges and nose cap of the Space Shuttle.
GS adhesives
. **tetraethyl orthosilicate**
RT ethyl compounds
glues
silicates

tetrafluorohydrazine
GS amines
. **tetrafluorohydrazine**
halogen compounds
. fluorine compounds
. . fluoro compounds
. . . **tetrafluorohydrazine**
hydrazines
. **tetrafluorohydrazine**
RT rocket oxidizers

tetragons
GS geometry
. Euclidean geometry
. . polygons
. . . **tetragons**
. . . . parallelograms
. . . . . rhomboids
. . . . rectangles
. . . . squares (mathematics)
. . . . trapezoids

tetrahedrons
GS geometry
. Euclidean geometry
. . polyhedrons
. . . **tetrahedrons**
RT triangles

tetrahydrofuran
DEF In organic chemistry, an intermediate and a solvent for polyvinyl chloride. Used for butylene oxides.
UF *butylene oxides*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . furans
. . . . **tetrahydrofuran**
solvents
. **tetrahydrofuran**
RT additives
∞ chemical compounds
plastics
polyvinyl chloride

tetranitrotetrazacyclooctane
USE **HMX**

tetraphenyls
GS phenyls
. polyphenyls
. . **tetraphenyls**

tetrazoles
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **tetrazoles**

tetrodes
RT electron tubes
pentodes
semiconductor devices
transistors
triodes

tetroons
USE **superpressure balloons**

tetryl
GS amines
. **tetryl**
explosives
. **tetryl**
nitrogen compounds
. nitro compounds
. . **tetryl**
propellants
. **tetryl**

texas
GS nations
. United States
. . **texas**
RT Gulf of Mexico
Houston (TX)
Lake Texoma (OK–TX)
Rio Grande (North America)

textbooks
GS documents
. **textbooks**
RT education
handbooks
knowledge
learning
libraries
manuals
subjects

textiles
GS **textiles**
. cotton fibers
. linen
. rayon
RT clothing
cotton
fabrics
fibers
vapor barrier clothing
wet spinning

texts
GS documents
. **texts**
RT format
records

textures
DEF The structural qualities of surfaces determined by the interrelation of their elements.
RT curl (materials)
fineness
mechanical properties
porosity
surface properties

TF–30 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **TF–30 engine**
. aircraft engines
. . **TF–30 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **TF–30 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **TF–30 engine**

TF–34 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **TF–34 engine**
. aircraft engines
. . **TF–34 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **TF–34 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **TF–34 engine**
RT convertible fan–shaft engines

TF–41 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **TF–41 engine**
. aircraft engines
. . **TF–41 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **TF–41 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . **TF–41 engine**

TFX aircraft
USE **F–111 aircraft**

TH–55 helicopter
GS Hughes aircraft
. **TH–55 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **TH–55 helicopter**

Thailand
GS nations
. **Thailand**
RT Asia

thalamus
GS anatomy
. nervous system
. . central nervous system
. . . brain
. . . . diencephalon
. . . . . **thalamus**

thallium
GS chemical elements
. **thallium**
. . thallium isotopes
metals
. **thallium**
. . thallium isotopes
RT thallium compounds

thallium alloys
GS alloys
. **thallium alloys**

thallium compounds
RT∞ metal compounds
thallium

thallium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **thallium isotopes**
. thallium
. . **thallium isotopes**
metals
. thallium
. . **thallium isotopes**

thawing
USE **melting**

Thebe
(added January 1996)
DEF A natural satellite of Jupiter orbiting at a mean distance of 221,900 kilometers.
GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . **Thebe**
RT Jupiter (planet)

thematic mappers (LANDSAT)
DEF Landsat multispectral scanners designed to acquire data to catagorize the Earth's surface. Particular emphasis was placed on agricultural applications and land use.
GS optical equipment
. optical scanners
. . multispectral band scanners
. . . **thematic mappers (LANDSAT)**
remote sensors
. **thematic mappers (LANDSAT)**
scanners
. optical scanners
. . multispectral band scanners
. . . **thematic mappers (LANDSAT)**
RT Landsat 4
Landsat 5
remote sensing
thematic mapping

thematic mapping
GS mapping
. **thematic mapping**
RT cadastral mapping
maps
photogeology
photomapping
photomaps
thematic mappers (LANDSAT)

Themis project
GS programs
. projects
. . **Themis project**

theodolites
DEF Optical instruments which consist of a sighting telescope, mounted so that it is free to rotate around horizontal and vertical axes, and graduated scales so that the angle of rotation may be measured. The telescope is usually fitted with a right angle prism so that the observer continues

to look horizontally into the eyepiece, whatever the variation of the elevation angle.
GS measuring instruments
. optical measuring instruments
. . transits
. . . **theodolites**
. . . . cinetheodolites
optical equipment
. optical measuring instruments
. . transits
. . . **theodolites**
. . . . cinetheodolites
RT sextants

Theodorsen transformation
RT airfoil profiles
complex variables
conformal mapping
coordinate transformations
Joukowski transformation
pressure distribution

theorem proving
GS problem solving
. **theorem proving**
proving
. **theorem proving**
RT artificial intelligence
computer programming
predicate calculus
theorems

theorems
UF *lemmas*
GS **theorems**
. addition theorem
. Bayes theorem
. Bernoulli theorem
. binomial theorem
. Castigliano variational theorem
. duality theorem
. equipartition theorem
. existence theorems
. Floquet theorem
. Gauss–Markov theorem
. Hellmann–Feynman theorem
. Kakutani theorem
. Lebesgue theorem
. Liouville theorem
. Michell theorem
. Pomeranchuk theorem
. Poynting theorem
. reciprocal theorems
. reciprocity theorem
. Richards theorem
. Riesz theorem
. Schauder fixpoint theorem
. similarity theorem
. . Lagrange similarity hypothesis
. Stokes theorem (vector calculus)
. uniqueness theorem
. virial theorem
RT hypotheses
mathematical logic
∞ mathematics
Taylor series
theorem proving

theoretical physics
GS **theoretical physics**
. Newton Theory
. quantum theory
. . Bohr theory
RT astrophysics
broken symmetry
charm (particle physics)
electrophysics
flavor (particle physics)
geophysics
grand unified theory
naked singularities
nuclear physics
∞ physics
plasma physics
radio physics
∞ science
∞ solid state physics
strange attractors
string theory
supergravity
supersymmetry
unified field theory
Yang–Mills theory

∞ **theories**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Abrikosov theory
assumptions
atomic theory
automata theory
BCS theory
Bellman theory
bending theory
Bessel–Bredichin theory
bimetric theories
Bogoliubov theory
Bohr theory
Born–Infeld theory
catastrophe theory
Chapman–Enskog theory
communication theory
control theory
Crocco–Lee theory
Debye–Huckel theory
decision theory
diffusion theory
dynamo theory
Dyson theory
Eyring theory
field mode theory
field theory (algebra)
field theory (physics)
finite difference theory
flow theory
fluctuation theory
Foster theory
game theory
gauge theory
geometrical theory of diffraction
Gestalt theory
Glauber theory
goal theory
graph theory
gravitation theory
Griffith crack
group theory
Hansen lunar theory
Heisenberg theory
Hill lunar theory
homotopy theory
Hueckel theory
hypotheses
information theory
Jeans theory
kinetic theory
Kolmogorov theory
learning theory
Malkus theory
Manning theory
matrix theory
Michaelis theory
mixing length flow theory
molecular theory
momentum theory
Newton Theory
nonadiabatic theory
number theory
numerical differentiation
Opik theory
orthogonal multiplexing theory
particle theory
perturbation theory
physical optics
piston theory
plate theory
population theory
potential theory
probability theory
quantum chromodynamics
quantum theory
queueing theory
Reissner theory
relativistic theory
S matrix theory
saddle points (game theory)
set theory
shell theory
spectral theory
statistical decision theory
strong interactions (field theory)
Sturm–Liouville theory
switching theory
tetrad theory
transport theory
vinti theory
weak interactions (field theory)
Yang–Mills theory
Young–Helmholtz theory

therapy
GS **therapy**
. chemotherapy
. massaging
. psychotherapy
. radiation therapy
RT cures
diseases
healing
medical equipment
patients
respirators
skin grafts

thermal absorption
GS energy absorption
. **thermal absorption**
. . polar cap absorption
RT ablation
∞ absorption
atmospheric attenuation
charring
gray gas
heat sinks
pyrolysis
temperature

thermal accommodation coefficients
USE **accommodation coefficient**

thermal agitation
USE **thermal energy**

thermal analysis
DEF A general term covering a group of related techniques whereby the dependence of the parameters of any physical property of a substance or temperature is measured. Used for differential thermal analysis and DTA (analysis).
UF *differential thermal analysis*

DTA (analysis)
RT ∞ analyzing
heat transmission
temperature
temperature gradients
temperature profiles

thermal barriers (plasma control)
RT ∞ barriers
fusion reactors
mirror fusion
plasma control
tandem mirrors

thermal batteries
GS electric generators
. direct power generators
. . primary batteries
. . . **thermal batteries**
electrochemical cells
. electric batteries
. . primary batteries
. . . **thermal batteries**
RT alkaline batteries
dry cells

thermal blooming
UF *laser beam defocusing*
thermal defocusing
RT laser cutting
laser heating
laser outputs
lasers
photon beams
temperature

thermal boundary layer
GS boundary layers
. **thermal boundary layer**
RT hypersonic boundary layer
laminar boundary layer
Rayleigh–Benard convection
temperature
turbulent boundary layer

thermal buckling
GS buckling
. **thermal buckling**
RT expansion
temperature
temperature effects
thermal expansion

thermal comfort
DEF That condition which expresses satisfaction with the thermal environment and which is measured by such factors as air temperature, relative humidity, air velocity, etc.
RT heat stroke
temperature
thermal environments

thermal conductivity
DEF Time rate of unidirectional heat transfer per unit area, in the steady-state, between parallel planes separated by unit distance, per unit difference of temperature of the planes.
GS thermodynamic properties
. thermophysical properties
. . **thermal conductivity**
transport properties
. **thermal conductivity**
RT air conductivity
atmospheric conductivity
conductive heat transfer
∞ conductivity
Fourier law
hot-wire flowmeters
Lewis numbers
specific heat
temperature
thermohydraulics

thermal conductivity gages
SN (GAGES FOR MEASURING THERMAL CONDUCTIVITY—EXCLUDES GAGES USING THERMAL CONDUCTIVITY TO MEASURE OTHER PROPERTIES OR VARIABLES)
GS measuring instruments
. **thermal conductivity gages**
RT temperature

thermal conductors
GS conductors
. **thermal conductors**
RT ∞ conduction
conductive heat transfer
electric conductors
temperature

thermal control coatings
GS coatings
. **thermal control coatings**
RT ablative materials
∞ control
heat shielding
reentry shielding
reusable heat shielding
temperature
temperature control

thermal convection
USE **free convection**

thermal currents
USE **convective flow**

thermal cycling tests
RT closed cycles
cooling
environmental tests
fatigue tests
heating
temperature
temperature control
∞ tests
thermodynamic properties

thermal decomposition
DEF The breaking apart of complex molecules into simpler units by the application of heat.
GS chemical reactions
. **thermal decomposition**
. . pyrolysis
decomposition
. **thermal decomposition**
. . pyrolysis
RT ablation
endothermic reactions
exothermic reactions
temperature
thermochemistry
thermogravimetry

thermal defocusing
USE **thermal blooming**

thermal degradation
DEF Impairment of properties caused by exposure to heat.
GS degradation
. **thermal degradation**
RT pyrolysis
sterilization effects
temperature
temperature dependence
temperature effects

thermal diffusion
GS diffusion
. **thermal diffusion**
thermodynamic properties
. thermophysical properties
. . **thermal diffusion**
RT Chapman–Enskog theory
∞ conduction
convective flow
electron diffusion
gas heating
gaseous diffusion
heat transfer
Kirkendall effect
Peclet number
∞ separation
Soret coefficient
surface diffusion
temperature
thermochemistry
thermohydraulics
viscosity

thermal diffusivity
DEF The ratio of thermal conductivity of a substance to the product of its density and specific heat. Common units for this property are sq cm/s or sq ft/h.
GS thermodynamic properties
. thermophysical properties
. . **thermal diffusivity**
transport properties
. **thermal diffusivity**
RT temperature
viscosity

thermal dissociation
GS chemical reactions
. **thermal dissociation**
dissociation
. **thermal dissociation**
RT cracking (chemical engineering)
decomposition
degradation
gas dissociation
heat of dissociation
hydrogen production
ionization
plasmas (physics)
temperature
temperature effects

thermal effects
USE **temperature effects**

thermal efficiency
USE **thermodynamic efficiency**

thermal emission
DEF The process by which a body emits electromagnetic radiation as a consequence of its temperature only.
GS emission
. **thermal emission**
. . thermionic emission
RT electron emission
emissivity
exhaust emission
incandescence
infrared absorption
temperature

thermal energy
UF *thermal agitation*
RT cogeneration
∞ energy

free energy
geothermal energy conversion
geothermal resources
heat
heat of fusion
heat of solution
internal energy
kinetic energy
lattice vibrations
photothermal conversion
solar thermal electric power plants
temperature
thermophotovoltaic conversion

thermal energy storage
USE **heat storage**

thermal environments
GS environments
. **thermal environments**
RT adiabatic conditions
aerospace environments
heat stroke
high temperature environments
life support systems
low temperature environments
lunar environment
planetary environments
satellite temperature
spacecraft environments
temperature
thermal comfort

thermal expansion
DEF The increase in the dimensions or the volume of a body due to change in temperature.
GS expansion
. **thermal expansion**
thermodynamic properties
. **thermal expansion**
RT Boussinesq approximation
dilatometry
extensometers
Gruneisen constant
heat transfer
high temperature tests
low temperature tests
neel temperature
∞ physical properties
temperature
thermal buckling
thermophysical properties
warpage

thermal fatigue
DEF In metals, fracture resulting from the presence of temperature gradients which vary with time in such a manner as to produce cyclic stresses in a structure.
UF *high temperature fatigue*
GS fatigue (materials)
. **thermal fatigue**
RT high temperature environments
metal fatigue
temperature

thermal gravimetry
USE **thermogravimetry**

thermal instability
DEF The conditions of temperature gradient, thermal conductivity, and viscosity which lead to the onset of convection in a fluid.
GS thermodynamic properties
. **thermal instability**
RT clear air turbulence
combustion stability
magnetohydrodynamic stability
pyrolysis
sputtering
stellarators
temperature

thermal insulation
DEF A material applied to reduce the flow of heat.
GS insulation
. **thermal insulation**
RT air conditioning
Amberlite (trademark)
asbestos
cork (materials)
cryogenic fluid storage
heat
heat shielding
heat sinks
heat transfer
heat transmission
heating equipment
reentry shielding
refractories
refractory coatings
temperature
temperature control
Trombe walls

thermal mapping
GS mapping
. **thermal mapping**
RT aerial reconnaissance
Earth resources
geothermal anomalies
geothermal resources
Heat Capacity Mapping Mission
infrared radiometers
infrared scanners
isothermal layers
isotherms
photomapping
planetary mapping
temperature
temperature distribution
temperature gradients
thermography

thermal neutrons
DEF Neutrons in thermal equilibrium with the medium in which they exist. Used for slow neutrons.
UF *slow neutrons*
GS nuclear radiation
. **thermal neutrons**
particles
. elementary particles
. . fermions
. . . neutrons
. . . . **thermal neutrons**
. neutral particles
. . neutrons
. . . **thermal neutrons**
RT baryons
fast neutrons
nuclear reactors
temperature
thermalization (energy absorption)

thermal noise
DEF The noise at radiofrequency caused by thermal agitation in a dissipative body. Also called Johnson noise.
GS elastic waves
. sound waves
. . noise (sound)
. . . **thermal noise**
electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . white noise
. . . . **thermal noise**
RT channel noise
electromagnetic noise measurement
noise temperature
shot noise
temperature

thermal plasmas
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **thermal plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **thermal plasmas**
RT electron plasma
high temperature plasmas
plasma generators
plasma temperature
temperature

thermal pollution
DEF Environmental temperature rise due to waste heat disposal.
GS pollution
. **thermal pollution**
RT biological effects
coastal ecology
environment effects
environment pollution
environmental quality
environmental surveys
environments
heat transfer
lakes
liquid cooling
marine biology
nuclear reactors
ocean temperature
oceans
plankton
pollution transport
seas
temperature
water pollution
water temperature

thermal power
USE **turbogenerators**

thermal properties
USE **thermodynamic properties**

thermal protection
GS protection
. **thermal protection**
RT ablative materials
carbon-carbon composites
heat shielding
Ludox (trademark)
radiation protection
reentry shielding
reusable heat shielding
temperature

thermal radiation
SN (EMITTED AS THE RESULT OF THERMAL EXCITATION OF MOLECULES)
DEF The electromagnetic radiation emitted by any substance as the result of the thermal excitation of its molecules. Thermal radiation

ranges in wavelength from the longest infrared radiation to the shortest ultraviolet radiation.
GS electromagnetic radiation
. **thermal radiation**
. . black body radiation
. . phonon beams
RT concentrators
greenhouse effect
heat
infrared radiation
light (visible radiation)
near infrared radiation
nongray gas
nonthermal radiation
Plancks constant
planetary radiation
∞ radiation
radio waves
sky radiation
solar radiation
sunlight
temperature
thermodynamic properties
ultraviolet radiation

thermal reactors
GS nuclear reactors
. **thermal reactors**
RT ∞ reactors
temperature

thermal resistance
DEF The extent to which a material retains useful properties as measured during exposure of the material to a specified temperature and environment for a specified time. Used for heat resistance.
UF *heat resistance*
GS mechanical properties
. **thermal resistance**
RT carbon–carbon composites
∞ high resistance
high temperature lubricants
high temperature tests
∞ low resistance
oxidation
oxidation resistance
∞ resistance
specific heat
temperature
temperature effects
thermodynamic properties

thermal resources
GS heat sources
. **thermal resources**
. . geothermal resources
. . . geysers
resources
. Earth resources
. . **thermal resources**
. . . geothermal resources
. . . . geysers
RT agrometeorology
atmospheric temperature
crop growth
crop vigor
geothermal technology
resources management
temperature
temperature distribution

thermal shielding
USE **heat shielding**

thermal shock
DEF The development of a steep temperature gradient and accompanying high stresses within a structure.
RT cooling
heating
high temperature tests
∞ shock
shock resistance
temperature
temperature distribution
thermodynamic properties

thermal simulation
GS simulation
. environment simulation
. . **thermal simulation**
RT altitude simulation
solar simulation
space environment simulation
temperature

thermal sinks
USE **heat sinks**

thermal stability
DEF Resistance to permanent changes in property caused soley by heat.
UF *thermostability*
GS stability
. **thermal stability**
thermodynamic properties
. thermophysical properties
. . **thermal stability**
RT dimensional stability
high temperature tests
low temperature tests
storage stability
surface stability
temperature
temperature dependence

thermal stresses
SN (EXCLUDES BIOLOGICAL STRESSES)
DEF Stresses in metal, resulting from nonuniform temperature distribution.
GS stresses
. **thermal stresses**
RT cooling
fatigue (materials)
heating
temperature
temperature distribution
temperature effects

thermal vacuum tests
GS vacuum tests
. **thermal vacuum tests**
RT environmental tests
high altitude environments
temperature
test chambers
∞ tests
vacuum chambers

thermalization (energy absorption)
GS energy absorption
. moderation (energy absorption)
. . **thermalization (energy absorption)**
. . . neutron thermalization
RT thermal neutrons

thermicons
GS electron tubes
. camera tubes
. . vidicons
. . . return beam vidicons
. . . . **thermicons**
. image tubes
. . **thermicons**
optical equipment
. image converters
. . image tubes
. . . **thermicons**

thermionic cathodes
GS electrodes
. cathodes
. . tube cathodes
. . . **thermionic cathodes**
emitters
. **thermionic cathodes**
RT hot cathodes

thermionic conversion systems
USE **thermionic power generation**

thermionic converters
GS electric generators
. direct power generators
. . **thermionic converters**
. . . SNAP 13
. . . solar blankets
RT cesium diodes
cesium plasma
∞ converters
fuel cells
ion production rates
magnetohydrodynamic generators
plasma power sources
radioisotope batteries
SNAP
solar cells
thermoelectric generators

thermionic diodes
GS electron tubes
. **thermionic diodes**
. . cesium diodes
electronic equipment
. diodes
. . **thermionic diodes**
. . . cesium diodes
RT Child–Langmuir law
perveance
semiconductor diodes

thermionic emission
DEF Direct ejection of electrons as the result of heating the material, which raises electron energy beyond the binding energy that holds the electron to the material. Used for Richardson–Dushman equation.
UF *Richardson–Dushman equation*
GS emission
. particle emission
. . **thermionic emission**
. thermal emission
. . **thermionic emission**
RT electron emission
ion emission
thermoelectricity
work functions

thermionic emitters
GS emitters
. **thermionic emitters**

thermionic power generation
UF *thermionic conversion systems*
RT ∞ conversion
SNAP
SNAP 13

thermionic reactors
USE **ion engines**
nuclear rocket engines

thermionics
DEF The study of the emission of electrons by heat.
RT cathodes
electron emission
∞ electronics
ion emission

thermistors
DEF Electron devices employing the temperature dependent change of resistivity of a semiconductor.
GS attenuators
. resistors
. . **thermistors**
electronic equipment
. solid state devices
. . semiconductor devices
. . . **thermistors**
temperature sensors
. **thermistors**
RT radiometers
temperature measuring instruments
varistors

thermites
DEF Fire-hazardous mixtures of ferric oxide and powdered aluminum; upon ignition with a magnesium ribbon, the mixtures reach temperatures up to 4000 degrees F (sufficient to soften steel).
RT aluminum oxides
Auger spectroscopy
barium ion clouds
copper oxides
ignition temperature
pyrotechnics

thermobalances
GS measuring instruments
. indicating instruments
. . weight indicators
. . . **thermobalances**
RT thermogravimetry

thermochemical properties
GS chemical properties
. **thermochemical properties**
. . heat of combustion
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
thermodynamic properties
. **thermochemical properties**
. . heat of combustion
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
RT heat balance
∞ properties

thermochemistry
DEF A branch of chemistry that treats the relations of heat and chemical changes.
GS **thermochemistry**
. aerothermochemistry
. combustion chemistry
RT chemical engineering
chemical reactions
∞ chemistry
combustion physics
enthalpy
entropy
heat
heat balance
heat of dissociation
heat of fusion
heat of solution
heat treatment
physical chemistry
propellant chemistry
pyrometallurgy
thermal decomposition
thermal diffusion
thermodynamic properties
thermodynamics
thermogravimetry
thermophysical properties
water splitting

thermochromatic materials
RT color
colorimetry
∞ inorganic materials
∞ materials
optical properties
organic materials
solids

thermoclines
GS gradients
. temperature gradients
. . **thermoclines**
RT oceanography
sea water
sound transmission
stratification
surface layers
surface temperature
underwater acoustics

thermocouple pyrometers
GS measuring instruments
. temperature measuring instruments
. . pyrometers
. . . **thermocouple pyrometers**
RT galvanometers
potentiometers (instruments)
radiation pyrometers
resistance thermometers
temperature measurement
thermocouples
thermoelement ammeters

thermocouples
DEF Devices which convert thermal energy directly into electrical energy. In its basic form it consists of two dissimilar metallic electrical conductors connected in a closed loop. Each junction forms a thermocouple.
GS **thermocouples**
. thermopiles
RT constantan
indicating instruments
Manganin (trademark)
Peltier effects
potentiometers (instruments)
Seebeck effect
temperature measurement
temperature measuring instruments
temperature probes
thermocouple pyrometers
thermoelectric generators
thermoelectricity

thermodynamic coupling
GS coupling
. **thermodynamic coupling**
RT BCS theory
electron phonon interactions
superconductors (materials)

thermodynamic cycles
GS cycles
. **thermodynamic cycles**
. . Brayton cycle
. . Carnot cycle
. . Otto cycle
. . Rankine cycle
. . Stirling cycle
RT adiabatic conditions
closed cycles
heat engines
internal combustion engines
laser propulsion
∞ strokes
thermodynamics

thermodynamic efficiency
DEF In thermodynamics, the ratio of the work done by a heat engine to the total heat supplied by the heat source. Used for thermal efficiency.
UF *thermal efficiency*
GS efficiency
. **thermodynamic efficiency**
RT combustion efficiency
compressor efficiency
engines
heat sources
internal combustion engines
nozzle efficiency
power efficiency
propulsion system performance
propulsive efficiency
specific impulse
temperature
thermodynamics

thermodynamic equilibrium
DEF A very general result from statistical mechanics which states that if a system is in equilibrium, all processes which can exchange energy must be exactly balanced by the reverse process so that there is no net exchange of energy.
RT acid base equilibrium
adiabatic conditions
chemical equilibrium
∞ equilibrium
heat of dissociation
isentropic processes
isochoric processes
isoenergetic processes
isothermal processes
liquid-vapor equilibrium
local thermodynamic equilibrium
statistical mechanics

thermodynamic properties
UF *thermal properties*
GS **thermodynamic properties**
. enthalpy
. . Gibbs free energy
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. entropy
. free energy
. . Gibbs free energy

. surface energy
. thermal expansion
. thermal instability
. thermochemical properties
. . heat of combustion
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. thermophysical properties
. . critical point
. . critical pressure
. . critical temperature
. . emissivity
. . fusibility
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. . melting points
. . pyroelectricity
. . specific heat
. . supercritical pressures
. . thermal conductivity
. . thermal diffusion
. . thermal diffusivity
. . thermal stability
. . vapor pressure
. . volatility
RT chemical properties
diffusivity
emittance
∞ equilibrium
heat
heat balance
high temperature tests
Joule–Thomson effect
optical properties
∞ physical properties
Prandtl number
propellant properties
∞ properties
Seebeck effect
solubility
temperature
tephigrams
thermal cycling tests
thermal radiation
thermal resistance
thermal shock
thermochemistry
thermodynamics
thermoluminescence
zero point energy

thermodynamics
DEF The study of the flow of heat. Used for heat equations, thermomechanics, and thermophysics.
UF *heat equations*
thermomechanics
thermophysics
GS **thermodynamics**
. aerothermodynamics
. combustion physics
. nonequilibrium thermodynamics
RT aerodynamics
∞ dynamics
engines
enthalpy
entropy
∞ equations
equations of state
∞ equilibrium
ergodic process
fluid mechanics
free energy
gas dynamics
heat
heat of fusion
heat of solution
heat transfer
internal energy
irreversible processes
isotherms
Joule–Thomson effect
Kirchhoff law of radiation
mechanical engineering
molecular relaxation
Mollier diagram
nonadiabatic conditions
nongray gas
nonisothermal processes
Onsager relationship
∞ paths
Pfaff equation
photothermal conversion
physical chemistry
plasma physics
plasmas (physics)
polytropic processes
Rankine cycle
Rayleigh equations
steam
thermochemistry
thermodynamic cycles
thermodynamic efficiency
thermodynamic properties
thermoelectric cooling
unsteady state

thermoelasticity
DEF Dependence of the stress distribution of an elastic solid on its thermal state, or of its thermal conductivity on the stress distribution.
GS mechanical properties
. elastic properties
. . **thermoelasticity**
. . . aerothermoelasticity
RT aeroelasticity
aerothermodynamics
hydroelasticity
thermoelectric generators
thermoelectric materials

thermoelectric conversion systems
USE **thermoelectric power generation**

thermoelectric cooling
UF *Ettingshausen coolers*
GS cooling
. **thermoelectric cooling**
RT cryogenics
Ettingshausen effect
heat pumps
Peltier effects
refrigerating
refrigerating machinery
thermodynamics
thermoelectricity
thermomagnetic cooling

thermoelectric generators
GS electric generators
. direct power generators
. . **thermoelectric generators**
. . . SNAP 3
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 10A
. . . SNAP 11
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . . solar sea power plants
RT ASTEC solar turboelectric generator
fuel cells
∞ generators
magnetohydrodynamic generators
nuclear auxiliary power units
photoelectric generators
radioisotope batteries
SNAP
solar cells
solar generators
space station power supplies
thermionic converters
thermocouples
thermoelasticity
thermoelectricity

thermoelectric materials
RT ∞ materials
semiconductors (materials)
thermoelasticity
thermoelectricity

Thermoelectric Outer Planet Spacecraft
USE **TOPS (spacecraft)**

thermoelectric power generation
UF *thermoelectric conversion systems*
RT ∞ conversion
nuclear auxiliary power units
SNAP
thermoelectricity

thermoelectric spacecraft
USE **TOPS (spacecraft)**

thermoelectricity
UF *Thomson effect*
RT Ettingshausen effect
Peltier effects
Seebeck effect
thermionic emission
thermocouples
thermoelectric cooling
thermoelectric generators
thermoelectric materials
thermoelectric power generation
thermopiles
transport properties

thermoelement ammeters
GS measuring instruments
. ammeters
. . **thermoelement ammeters**
RT thermocouple pyrometers

thermograms
USE **recording instruments**
temperature measuring instruments

thermography
DEF Technique employing heat transfer transients.
RT infrared imagery
nondestructive tests
temperature distribution
temperature measurement
thermal mapping

thermogravimetry
UF *thermal gravimetry*
RT chemical analysis

dehydration
pyrolysis
temperature effects
thermal decomposition
thermobalances
thermochemistry

thermohydraulics
RT convective heat transfer
fluid dynamics
fluid flow
heat transmission
∞ hydraulics
hydrodynamics
laminar heat transfer
radiative heat transfer
thermal conductivity
thermal diffusion
turbulent heat transfer

thermoluminescence
GS emission
. light emission
. . luminescence
. . . **thermoluminescence**
RT temperature effects
thermodynamic properties

thermomagnadynamics
USE **thermomagnetic effects**

thermomagnetic cooling
UF *Nernst generators*
GS cooling
. **thermomagnetic cooling**
RT cryogenics
Ettingshausen effect
thermoelectric cooling

thermomagnetic effects
UF *thermomagnadynamics*
thermomagnetism
GS magnetic properties
. **thermomagnetic effects**
RT ∞ effects
Ettingshausen effect
Nernst–Ettingshausen effect

thermomagnetism
USE **thermomagnetic effects**

thermomechanical treatment
DEF Combination of material-forming processes with heat treatments in order to obtain specific material properties.
GS **thermomechanical treatment**
. hot pressing
. . hot isostatic pressing
RT heat affected zone
heat treatment
∞ metallurgy
microstructure
plastic deformation
quenching (cooling)
∞ treatment

thermomechanics
USE **thermodynamics**

thermometers
DEF Devices for measuring temperature.
GS measuring instruments
. temperature measuring instruments
. . **thermometers**
. . . resistance thermometers
RT temperature control
temperature measurement
temperature scales

thermometry
USE **temperature measurement**

thermomigration
DEF A technique for doping semiconductors in which exact amounts of known impurities are made to migrate from the cool side of a wafer of pure semiconductor material to the hotter side when the wafer is heated in an oven.
RT electromigration
heat transfer
temperature gradients

thermonuclear energy
USE **thermonuclear power generation**

thermonuclear explosions
GS explosions
. nuclear explosions
. . **thermonuclear explosions**
RT aerial explosions
Argus project
fission weapons
nuclear devices
nuclear vulnerability
underground explosions
underwater explosions

thermonuclear power generation
UF *thermonuclear energy*
GS nuclear electric power generation
. **thermonuclear power generation**
RT Astron thermonuclear reactor
controlled fusion
electric generators
∞ energy
pinch effect
plasma generators
stellarators
zeta thermonuclear reactor

thermonuclear propulsion
USE **nuclear propulsion**

thermonuclear reactions
GS nuclear reactions
. **thermonuclear reactions**
. . nuclear fusion
. . . controlled fusion
RT Astron thermonuclear reactor
high energy interactions
magnetohydrodynamics
pinch effect
plasmas (physics)
proton–proton reactions
Q values (nuclear physics)
radioactive decay
Scylla
stellarators
zeta thermonuclear reactor

thermophiles
RT algae
fungi
mesophiles
psychrophiles

thermophilic plants
GS plants (botany)
. **thermophilic plants**
. . blue green algae
. . . anabaena
. . . Microcystis
. . . Nostoc
RT algae

thermophoresis
DEF A process in which particles migrate in a gas under the influence of forces created by a temperature gradient.
RT aerosols
deposition
diffusion
particle diffusion
particle motion
particle size distribution
∞ separation
temperature effects
temperature gradients

thermophotovoltaic conversion
(added May 1995)
DEF A technique for efficiently converting heat or solar energy to electrical energy using heated surfaces coated with a selective emitter material whose photon emission peaks sharply in a narrow wavelength.
GS energy conversion
. solar energy conversion
. . photothermal conversion
. . . **thermophotovoltaic conversion**
. . photovoltaic conversion
. . . **thermophotovoltaic conversion**
RT emitters
energy conversion efficiency
solar cells
spacecraft power supplies
thermal energy

thermophysical properties
GS thermodynamic properties
. **thermophysical properties**
. . critical point
. . critical pressure
. . critical temperature
. . emissivity
. . fusibility
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. . melting points
. . pyroelectricity
. . specific heat
. . supercritical pressures
. . thermal conductivity
. . thermal diffusion
. . thermal diffusivity
. . thermal stability
. . vapor pressure
. . volatility
RT Peltier effects
∞ properties
Seebeck effect
surface energy
thermal expansion
thermochemistry

thermophysics
USE **thermodynamics**

thermopiles
DEF Transducers for converting thermal energy directly into electrical energy, composed of pairs of thermocouples which are connected either in series or in parallel. Batteries of thermocouples connected in series to form single compact units.
GS thermocouples
. **thermopiles**
transducers
. **thermopiles**
RT Dicke radiometers
indicating instruments

temperature measuring instruments
thermoelectricity

thermoplastic films
DEF Materials with a linear macromolecular structure that will repeatedly soften when heated and harden when cooled.
GS plastics
. synthetic resins
. . thermoplastic resins
. . . **thermoplastic films**
resins
. synthetic resins
. . thermoplastic resins
. . . **thermoplastic films**
RT ∞ films

thermoplastic resins
GS plastics
. synthetic resins
. . **thermoplastic resins**
. . . PEEK
. . . quinoxalines
. . . thermoplastic films
resins
. synthetic resins
. . **thermoplastic resins**
. . . PEEK
. . . quinoxalines
. . . thermoplastic films
RT acrylic resins
glass fiber reinforced plastics
polyethylenes
polymer blends
polystyrene
thermoplasticity
thermosetting resins
vulcanized elastomers

thermoplasticity
GS mechanical properties
. plastic properties
. . **thermoplasticity**
RT Bouguer law
temperature effects
thermoplastic resins

thermoreceptors
GS anatomy
. sense organs
. . **thermoreceptors**
receptors (physiology)
. **thermoreceptors**
RT body temperature
sensitometry
skin (anatomy)
thermoregulation

thermoregulation
DEF A mechanism by which mammals and birds balance heat gain and loss in order to maintain a constant body temperature. Used for body temperature regulation.
UF *body temperature regulation*
RT body temperature
cold tolerance
hibernation
homeostasis
hyperthermia
hypothermia
metabolism
physiology
regulatory mechanisms (biology)
temperature control
thermoreceptors

thermosetting resins
GS plastics
. synthetic resins
. . **thermosetting resins**
. . . epoxy resins
. . . . phenolic epoxy resins
. . . furan resins
. . . . polyamide resins
. . . . . Kevlar (trademark)
. . . . . Nylon (trademark)
. . . phenolic resins
. . . . micarta
. . . . phenolic epoxy resins
resins
. synthetic resins
. . **thermosetting resins**
. . . epoxy resins
. . . . phenolic epoxy resins
. . . furan resins
. . . . polyamide resins
. . . . . Kevlar (trademark)
. . . . . Nylon (trademark)
. . . phenolic resins
. . . . micarta
. . . . phenolic epoxy resins
RT Bakelite (trademark)
composite materials
formica
glass fiber reinforced plastics
laminates
polyester resins
reinforced plastics
silicone resins
thermoplastic resins

thermosiphons
GS regenerators
. **thermosiphons**
RT convective heat transfer
free convection
∞ radiators
siphoning

thermosphere
SN (ALTITUDES ABOVE APPROXIMATELY 80 KM)
GS Earth atmosphere
. upper atmosphere
. . **thermosphere**
. . . turbopause
RT chemosphere
Earth ionosphere
Earth magnetosphere
exosphere
heterosphere
homosphere

thermostability
USE **thermal stability**

thermostats
GS control equipment
. regulators
. . **thermostats**
switches
. electric switches
. . **thermostats**
RT automatic control
controllers
cryostats
temperature control
temperature measuring instruments

thermotropism
USE **anisotropy**
temperature effects

thermoviscoelasticity
GS mechanical properties
. elastic properties
. . viscoelasticity
. . . **thermoviscoelasticity**
RT irreversible processes
stress-strain-time relations

thesauri
RT indexes (documentation)
information retrieval
KWIC indexes
nomenclatures
space glossaries
terminology
terms
words (language)

theses
GS documents
. **theses**
RT hypotheses

theta pinch
GS pinch effect
. plasma pinch
. . **theta pinch**
RT laser plasma interactions
plasma compression
rotating plasmas
screw pinch
zeta pinch

thiamine
UF *vitamin B*
GS organic compounds
. coenzymes
. . **thiamine**
. cyclic compounds
. . heterocyclic compounds
. . . **thiamine**
vitamins
. **thiamine**

thiazine (trademark)
GS dyes
. **thiazine (trademark)**
nitrogen compounds
. **thiazine (trademark)**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **thiazine (trademark)**
sulfur compounds
. **thiazine (trademark)**

thick films
RT electronic packaging
∞ films
integrated circuits
microminiaturization
printed circuits
semiconducting films
superconducting films
thin films

thick plates
DEF Plates of steel or other material that are over two inches thick. The exact definition of dimensions that constitute thickness varies.
GS structural members
. plates (structural members)
. . **thick plates**
RT flat plates
metal plates
∞ plates
∞ sheets
thickness
thin plates

thick walls
GS walls

. thick walls
RT boiler plate
bulkheads
reinforcement (structures)
structural members
thin walls
wall pressure
wall temperature

∞ thickeners
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT thickeners (equipment)
thickeners (materials)

thickeners (equipment)
GS separators
. classifiers
. . thickeners (equipment)
RT coalescing
precipitators
∞ thickeners

thickeners (materials)
RT additives
gels
greases
∞ materials
∞ thickeners

thickness
GS thickness
. boundary layer thickness
RT airfoil profiles
depth
diameters
dimensions
film thickness
length
optical thickness
spacing
target thickness
thick plates
thickness ratio
volume

thickness ratio
GS ratios
. thickness ratio
RT airfoil profiles
airfoils
fineness ratio
thickness
thin airfoils
thin wings

thigh
GS anatomy
. limbs (anatomy)
. . leg (anatomy)
. . . thigh
appendages
. leg (anatomy)
. . thigh

thin airfoils
GS airfoils
. thin airfoils
. . thin wings
. . . infinite span wings
RT airfoil profiles
thickness ratio

∞ thin bodies
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT slender bodies
thin plates
thin walls
thin wings

thin films
SN (SOLID STATE PHYSICS AND ELECTRONICS)
DEF Films having a thickness much smaller than any lateral dimension, formed by deposition of a material or by a thinning process.
GS thin films
. diamond films
. energy absorption films
. ferromagnetic films
. monomolecular films
. . Langmuir-Blodgett films
RT amorphous silicon
atomic force microscopy
atomic layer epitaxy
coatings
computer storage devices
copper indium selenides
electrochromism
electrode film barriers
ferroelectric materials
∞ films
heterojunctions
indium selenides
integrated circuits
integrated optics
ion plating
Langmuir turbulence
metal films
microchannel plates
microminiaturization
miniature electronic equipment
molecular electronics
oxide films
parametrons
pellicle
plating
praseodymium devices
rectifiers
semiconducting films
silicon films
solid state devices
∞ solid state physics
sputtering gages
squeeze films
superconducting films
thick films
wafers
YBCO superconductors
yttria-stabilized zirconia

thin layer chromatography
GS chemical tests
. chemical analysis
. . chromatography
. . . thin layer chromatography
RT gas chromatography
monomolecular films

thin plates
SN (EXCLUDES THIN SURFACE COATINGS AND FILMS)
GS structural members
. plates (structural members)
. . thin plates
RT diaphragms (mechanics)
flat plates
foils (materials)
metal plates
panels
parallel plates
∞ plates
∞ sheets
thick plates
∞ thin bodies

thin walled shells
GS shells (structural forms)
. thin walled shells
RT cylindrical shells
membrane structures
metal shells
orthotropic shells
reinforced shells
skin (structural member)
spherical shells
stressed-skin structures
toroidal shells

thin walls
GS walls
. thin walls
RT bulkheads
diaphragms (mechanics)
partitions (structures)
skin (structural member)
thick walls
∞ thin bodies

thin wings
GS airfoils
. thin airfoils
. . thin wings
. . . infinite span wings
. wings
. . thin wings
. . . infinite span wings
RT airfoil profiles
fixed wings
flexible wings
thickness ratio
∞ thin bodies
unremembered wings

thinners
USE solvents

thiols
UF *dithiols*
mercaptan
mercapto compounds
GS sulfur compounds
. thiols
. . cysteine
. . dimercaprol
RT alcohols
∞ chemical compounds
phenols

thiophenes
(added January 1995)
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . thiophenes
RT benzene
drugs
furans
pyrroles

thioplastics
RT elastomers
plastics
sulfides

thioureas
GS nitrogen compounds
. amides
. . ureas
. . . thioureas

thiuronium
GS amines
. thiuronium
nitrogen compounds

. amides
. . ureas
. . . thiuronium

thixotropic propellants
USE **gelled rocket propellants**

thixotropy
DEF The property of material that enables it to stiffen in a relatively short time on standing, but upon agitation or manipulation to change to a very soft consistency or to a fluid of high viscosity, the process being completely reversible.
RT gelation
gels
liquefaction
nonNewtonian flow
∞ physical properties
semisolids
solubility
viscosity

Thomas–Fermi model
UF *Thomas–Fermi theory*
GS models
. mathematical models
. . Thomas–Fermi model
RT atomic structure
electron distribution
plasma composition
quantum statistics

Thomas–Fermi theory
USE **Thomas–Fermi model**

Thomson effect
USE **thermoelectricity**

Thomson scattering
GS scattering
. wave scattering
. . electromagnetic scattering
. . . Thomson scattering
RT electromagnetic radiation

Thor Able rocket vehicle
GS launch vehicles
. Thor launch vehicles
. . Thor Able rocket vehicle
. Thorad launch vehicles
. . Thor Able rocket vehicle
rocket vehicles
. multistage rocket vehicles
. . Thor launch vehicles
. . . Thor Able rocket vehicle
. Thorad launch vehicles
. . Thor Able rocket vehicle
RT Explorer 6 satellite
liquid propellant rocket engines
Pioneer 1 space probe
Pioneer 5 space probe
solid propellant rocket engines
TIROS 1 satellite

Thor Agena launch vehicle
GS launch vehicles
. Thor launch vehicles
. . Thor Agena launch vehicle
. Thorad launch vehicles
. . Thor Agena launch vehicle
rocket vehicles
. multistage rocket vehicles
. . Thor launch vehicles
. . . Thor Agena launch vehicle
. Thorad launch vehicles
. . Thor Agena launch vehicle
RT Agena A rocket vehicle
Agena B Ranger Program
Agena rocket vehicles
Discoverer satellites
Explorer 31 satellite
Explorer 34 satellite
Explorer 35 satellite
Explorer 36 satellite
liquid propellant rocket engines
Nimbus 1 satellite
Nimbus 2 satellite
Nimbus satellites
OGO–3

Thor Delta launch vehicle
UF *Echo 1 carrier rocket*
GS launch vehicles
. Thor launch vehicles
. . Thor Delta launch vehicle
. Thorad launch vehicles
. . Thor Delta launch vehicle
rocket vehicles
. multistage rocket vehicles
. . Thor launch vehicles
. . . Thor Delta launch vehicle
. Thorad launch vehicles
. . Thor Delta launch vehicle
RT Ariel satellites
Echo 1 satellite
Explorer satellites
liquid propellant rocket engines
OSO
Relay satellites
solid propellant rocket engines
SYNCOM satellites
Telstar satellites

Thor launch vehicles
GS launch vehicles
. Thor launch vehicles
. . Thor Able rocket vehicle
. . Thor Agena launch vehicle
. . Thor Delta launch vehicle
rocket vehicles
. multistage rocket vehicles
. . Thor launch vehicles
. . . Thor Able rocket vehicle
. . . Thor Agena launch vehicle
. . . Thor Delta launch vehicle
RT liquid propellant rocket engines
solid propellant rocket engines
Thorad launch vehicles
∞ vehicles

Thorad launch vehicles
GS launch vehicles
. Thorad launch vehicles
. . Thor Able rocket vehicle
. . Thor Agena launch vehicle
. . Thor Delta launch vehicle
rocket vehicles
. Thorad launch vehicles
. . Thor Able rocket vehicle
. . Thor Agena launch vehicle
. . Thor Delta launch vehicle
RT liquid propellant rocket engines
Thor launch vehicles
∞ vehicles

thorax
GS anatomy
. thorax
RT chest
diaphragm (anatomy)
sternum
viscera

thorium
GS chemical elements
. actinide series
. . thorium
. . . thorium isotopes
metals
. actinide series
. . thorium
. . . thorium isotopes
RT nuclear fuels

thorium 228
USE **thorium isotopes**

thorium 230
USE **thorium isotopes**

thorium 234
USE **thorium isotopes**

thorium alloys
GS alloys
. thorium alloys
RT nuclear fuels

thorium compounds
GS actinide series compounds
. thorium compounds
. . thorium fluorides
. . thorium oxides
RT ceramic nuclear fuels
∞ chemical compounds
∞ metal compounds
nuclear fuels

thorium fluorides
GS actinide series compounds
. thorium compounds
. . thorium fluorides
halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . thorium fluorides
. halides
. . fluorides
. . . metal fluorides
. . . . thorium fluorides
. . metal halides
. . . metal fluorides
. . . . thorium fluorides

thorium isotopes
UF *thorium 228*
thorium 230
thorium 234
GS chemical elements
. actinide series
. . thorium
. . . thorium isotopes
. nuclides
. . isotopes
. . . thorium isotopes
metals
. actinide series
. . thorium
. . . thorium isotopes

thorium oxides
GS actinide series compounds
. thorium compounds
. . thorium oxides
chalcogenides
. oxides
. . metal oxides
. . . thorium oxides
RT dioxides

thoron
USE **radon isotopes**

threads
SN (EXCLUDES TEXTILES AND FILAMENTARY FORMS)
RT bolts
nuts (fasteners)
screws

threat evaluation
DEF The evaluation of the potential harm of an approaching aircraft or other objects.
RT aircraft hazards
aircraft safety
collision avoidance
midair collisions
radar tracking
warning systems

three axis stabilization
DEF Maintenance of a stable platform in a desired 3–axis orientation in inertial space by utilizing gyros and accelerometers and which is independent of vehicle motion.
GS stabilization
. three axis stabilization
RT inertial platforms
satellite attitude contro
satellite orientation
stabilized platforms

three body problem
DEF That problem in classical celestial mechanics which treats the motion of a small body, usually with negligible mass, relative to and under the gravitational influence of two other finite point masses.
RT celestial mechanics
four body problem
many body problem
orbits
perturbation
∞ problems
retrograde orbits
triple stars
Trojan orbits
two body problem

three dimensional bodies
RT aerodynamic configurations
∞ bodies
boundary value problems
flow distribution

three dimensional boundary layer
GS boundary layers
. three dimensional boundary layer
RT axisymmetric flow
boundary layer transition
compressible boundary layer
laminar boundary layer
∞ layers
secondary flow
turbulent boundary layer
velocity distribution

three dimensional composites
GS composite materials
. three dimensional composites
RT braided composites
fiber composites
∞ materials
woven composites

three dimensional flow
GS fluid flow
. parallel flow
. . three dimensional flow
. . . Karman–Bodewadt flow
. . . secondary flow
translational motion
. three dimensional motion
. . three dimensional flow
. . . Karman–Bodewadt flow
. . . secondary flow
RT axial flow
conical flow
flow geometry
helical flow
one dimensional flow
Roshko prediction
spherical waves
two dimensional flow
wedge flow

three dimensional models
(added August 1986)
GS models
. three dimensional models
RT computational grids
computer aided design
computerized simulation
mathematical models
two dimensional models

three dimensional motion
GS translational motion
. three dimensional motion
. . three dimensional flow
. . . Karman–Bodewadt flow
. . . secondary flow
RT degrees of freedom
optical flow (image analysis)

threshold currents
GS electric current
. threshold currents
RT lasers
threshold voltage
∞ thresholds

threshold detectors (dosimeters)
GS measuring instruments
. radiation measuring instruments
. . radiation detectors
. . . dosimeters
. . . . threshold detectors (dosimeters)
RT ionization chambers
∞ thresholds

threshold gates
GS circuits
. digital electronics
. . logic circuits
. . . threshold gates
. gates (circuits)
. . threshold gates
RT ∞ thresholds
trigger circuits

threshold logic
GS mathematical logic
. set theory
. . threshold logic
RT gates (circuits)
∞ logic
logic circuits
∞ thresholds
transistor logic
trigger circuits

threshold shift
USE thresholds

threshold voltage
DEF The threshold energy necessary to remove an electron from the bound position to the conduction band in solid state devices.
GS potential energy
. electric potential
. . threshold voltage
RT photovoltages
photovoltaic effect
semiconductor junctions
silicon junctions
solid state devices
threshold currents
∞ thresholds
volt–ampere characteristics

∞ **thresholds**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF Generally, the minimum values of signals that can be detected by the systems or sensors under consideration. Used for threshold shift.
UF *threshold shift*
RT doors
entrances
noise threshold
resolution
responses
sensitivity
threshold currents
threshold detectors (dosimeters)
threshold gates
threshold logic
threshold voltage
thresholds (perception)

thresholds (perception)
RT acuity
adaptation
audiometry
auditory perception
auditory sensation areas
auditory stimuli
chronaxy
frequency response
hearing
light adaptation
limen
neurology
perception
photosensitivity
sensitivity
∞ thresholds
vision
visual perception

throats
SN (NON BIOLOGICAL)
DEF The narrowest portion of a constricted duct, as in a diffuser, or a venturi tube. SN (non biological).
RT carburetors
∞ channels
chokes (restrictions)
ducts
nozzle geometry
nozzle inserts
nozzle walls
orifices

thrombin
GS biopolymers
. proteins
. . enzymes
. . . thrombin
body fluids
. blood
. . thrombin
organic compounds
. proteins
. . enzymes

. . . thrombin
RT blood coagulation
fibrin
fibrinogen
hemostatics
prothrombin
thromboplastin

thrombocytes
RT blood coagulation
clotting

thrombopenia
GS diseases
. thrombopenia
RT coagulation

thromboplastin
GS body fluids
. blood
. . thromboplastin
RT blood coagulation
clotting
hemostatics
homeostasis
platelets
thrombin

thrombosis
GS diseases
. thrombosis
RT blood coagulation
infarction
myocardial infarction

throttling
RT Joule–Thomson effect
variable thrust

throwing
RT ejection
spreading

thrust
DEF The pushing or pulling force developed by an aircraft engine or a rocket engine. The force exerted in any direction by a fluid jet or by a powered screw, as, the thrust of an antitorque rotor. Specifically in rocketry, F(thrust) = *mv* where *m* is propellant mass flow and v is exhaust velocity relative to the vehicle. Used for thrust power.
UF *thrust power*
GS thrust
. high thrust
. jet thrust
. leading edge thrust
. low thrust
. . microthrust
. rocket thrust
. . retrothrust
. static thrust
. variable thrust
RT acceleration (physics)
auxiliary propulsion
burning time
dual thrust nozzles
∞ force
jet engines
nozzle thrust coefficients
∞ power
propulsion
∞ reaction
rocket engines
rocket propellants
specific impulse

thrust augmentation
DEF The increasing of the thrust of an engine or power plant, especially of a jet engine and usually for a short period of time, over the thrust normally developed.
GS augmentation
. thrust augmentation
RT afterburning
Coanda effect
high thrust
secondary injection
shrouded propellers
variable thrust
water injection

thrust bearings
GS bearings
. thrust bearings
RT antifriction bearings
ball bearings
gas bearings
roller bearings

thrust chamber pressure
GS pressure
. thrust chamber pressure

thrust chambers
UF *rocket chambers*
RT arc chambers
∞ chambers
combustion chambers
divergent nozzles
rocket engine cases

thrust control
GS thrust control
. thrust vector control
RT attitude control
∞ control
control rockets
engine control
jet control
∞ reaction control
rocket engine control
satellite control
turbojet engine control
variable thrust

thrust distribution
DEF The location of areas of upward thrust (lift) on wings, airfoils, etc.
RT aerodynamic forces
∞ distribution
force distribution
leading edges
pressure distribution
vortices
wing planforms

thrust faults
USE geological faults

thrust loads
GS loads (forces)
. dynamic loads
. . thrust loads
RT aerodynamic loads
axial compression loads
axial loads
compression loads
jet thrust
rocket thrust
structural design criteria

thrust measurement
GS mechanical measurement
. thrust measurement
RT accelerometers
dynamometers
∞ force
∞ measurement

thrust power
USE thrust

thrust programming
UF *optimum thrust programming*
GS programming (scheduling)
. thrust programming
RT flight mechanics
flight optimization
flight plans
orbital mechanics
parking orbits
propulsive efficiency
trajectory control

thrust reversal
RT aircraft brakes
brakes (for arresting motion)
braking
deceleration

thrust termination
GS stopping
. thrust termination
RT burnout
rocket thrust
stage separation
variable thrust

thrust vector control
UF *TVC (control)*
GS attitude control
. directional control
. . thrust vector control
flight control
. thrust vector control
thrust control
. thrust vector control
RT air slew missiles
automatic control
automatic flight control
∞ control
guide vanes
gyrostabilizers
jet vanes
liquid injection
maneuverable spacecraft
missile control
nozzle thrust coefficients
rocket engines
secondary injection
spacecraft control
variable thrust
Vernier engines
X-31 aircraft

thrust-weight ratio
GS ratios
. thrust-weight ratio
RT acceleration (physics)
mass ratios
pressure ratio
rocket engines

∞ **thrustors**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ion engines
rocket engines

thulium
GS chemical elements
. rare earth elements
. . thulium
. . . thulium isotopes
metals
. rare earth elements
. . thulium

. . . thulium isotopes

thulium 171
USE thulium isotopes

thulium compounds
GS rare earth compounds
. thulium compounds
RT ∞ chemical compounds
∞ metal compounds

thulium isotopes
UF *thulium 171*
GS chemical elements
. nuclides
. . isotopes
. . . thulium isotopes
. rare earth elements
. . thulium
. . . thulium isotopes
metals
. rare earth elements
. . thulium
. . . thulium isotopes

Thunderchief aircraft
USE F-105 aircraft

thunderstorms
DEF Local storms resulting from warm humid air rising in an unstable environment.
GS storms
. storms (meteorology)
. . rainstorms
. . . thunderstorms
RT anvil clouds
arc clouds
atmospherics
cirrocumulus clouds
cirrostratus clouds
clouds (meteorology)
cold fronts
cumulonimbus clouds
downbursts
fronts (meteorology)
hail
hailstorms
lightning
lightning suppression
microbursts (meteorology)
rain
storm damage
warm fronts
wind (meteorology)

thymidine
GS acids
. thymidine
bases (chemical)
. thymidine
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . pyrimidines
. . . . thymidine
RT alloxan
deoxyribonucleic acid
nucleosides

thymine
GS acids
. thymine
nitrogen compounds
. thymine
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . pyrimidines
. . . . thymine
RT alloxan
deoxyribonucleic acid

thymol
GS hydroxyl compounds
. alcohols
. . phenols
. . . thymol

thymus gland
GS anatomy
. glands (anatomy)
. . endocrine glands
. . . thymus gland

thyratrons
GS electron tubes
. gas discharge tubes
. . thyratrons
microwave equipment
. thyratrons
rectifiers
. thyratrons
RT current converters (AC to DC)
silicon controlled rectifiers
thyristors

thyristors
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . thyristors
. . . . silicon controlled rectifiers
rectifiers
. thyristors
. . silicon controlled rectifiers
RT junction transistors
p-n-p-n junctions
thyratrons
trigger circuits
triodes

thyroid gland
GS anatomy
. glands (anatomy)
. . endocrine glands
. . . thyroid gland
RT calcium metabolism
hypometabolism
thyroxine

thyroxine
GS acids
. amino acids
. . thyroxine
organic compounds
. amino acids
. . thyroxine
secretions
. endocrine secretions
. . hormones
. . . thyroxine
RT thyroid gland

Tibet
GS nations
. Tibet
RT Asia
Bhutan
Himalayas

tibia
GS anatomy
. musculoskeletal system
. . bones
. . . tibia
RT leg (anatomy)

TID
USE traveling ionospheric disturbances

tidal flats
GS landforms
. flats (landforms)
. . tidal flats
RT aquiculture
coasts
estuaries
fisheries
marshlands
mud
oceans
shorelines
tides

tidal oscillation
USE tides

tidal waves
GS water waves
. tidal waves
RT ocean currents
ocean surface
oceanography
sea breeze
sea roughness
seismology
tsunami waves
∞ waves
wind (meteorology)

tide powered generators
RT electric generators
energy conversion efficiency
∞ generators
ocean currents
ocean surface
oceanography
oceans
sea roughness
tidepower
tides
waterwave energy conversion
waterwave powered machines

tide powered machines
RT ∞ machinery
ocean currents
ocean surface
sea roughness
tidepower
tides
waterwave energy conversion
waterwave powered machines

tidepower
RT clean energy
Earth resources
∞ energy sources
ocean currents
ocean surface
oceanography
sea roughness
tide powered generators
tide powered machines
tides
waterwave energy
waterwave energy conversion
waterwave powered machines

tides
DEF The periodic rising and falling of the Earth's oceans and atmosphere. It results from the gravitational forces of the moon and sun acting upon the rotating Earth. The disturbance actually propagates as a wave through the atmosphere

and along the surface of the waters of the Earth. Atmospheric tides are always so designated, whereas the term tide alone commonly implies the oceanic variety. Used for tidal oscillation.
UF *tidal oscillation*
GS **tides**
. atmospheric tides
. Earth tides
. lunar tides
RT coastal currents
estuaries
flood damage
floods
ocean currents
ocean surface
oceanography
pressure ice
sea roughness
tidal flats
tide powered generators
tide powered machines
tidepower
water currents
waterwave energy conversion
waterwave powered machines
wetlands

tiebolts
GS fasteners
. bolts
. . **tiebolts**

TIG welding
USE **gas tungsten arc welding**

tightness
RT clearances
closures
proximity

tiles
DEF Ceramic surfacing units, usually relatively thin in relation to facial area, made from clay or a mixture of clay and other ceramic materials, called the body of the tile having either a "glazed" or "unglazed" face and fired above red heat in the course of manufacture to a temperature sufficiently high to produce specific physical properties and characteristics.
RT ceramics
floors
grout
Ludox (trademark)
masonry
walls

tilt
USE **attitude (inclination)**

tilt rotor aircraft
DEF A type of convertible aircraft which takes off, hovers, and lands as a helicopter but is converted into a fixed wing aircraft by the 90-degree tilting of its rotor or rotors for use as a propeller for forward flight.
GS V/STOL aircraft
. rotary wing aircraft
. . **tilt rotor aircraft**
. . . V-22 aircraft
. . . XV-15 aircraft
RT ∞ aircraft
helicopters
rotor stator interactions
tilting rotors

Tilt Rotor Research Aircraft Program
GS programs
. NASA programs
. . **Tilt Rotor Research Aircraft Program**
RT ∞ aircraft
helicopters
rotary wings
V-22 aircraft
XV-15 aircraft

tilt wing aircraft
UF *pivoted wing aircraft*
GS **tilt wing aircraft**
. CL-84 aircraft
. L-29 jet trainer
. VZ-2 aircraft
. XC-142 aircraft
RT ∞ aircraft
fan in wing aircraft
research aircraft
short takeoff aircraft
V-22 aircraft
V/STOL aircraft
vertical takeoff aircraft
X-22 aircraft

tilted propellers
GS propellers
. **tilted propellers**
RT helicopter propeller drive

tilting
USE **attitude (inclination)**

tilting rotors
GS airfoils
. wings
. . rotary wings
. . . **tilting rotors**
rotating bodies
. rotors
. . rotary wings
. . . **tilting rotors**
RT tilt rotor aircraft
V-22 aircraft
XV-3 aircraft

tiltmeters
DEF Instruments used to measure small changes in the tilt of the Earth's surface usually in relation to a liquid-level surface or to the rest position of a pendulum.
GS measuring instruments
. **tiltmeters**
RT attitude (inclination)
geophysics
seismographs

timber identification
GS identifying
. **timber identification**
recognition
. **timber identification**
RT conifers
crop identification
deciduous trees
Earth resources
evaluation
forests
trees (plants)

timber inventory
GS inventories
. **timber inventory**
RT aerial photography
Earth resources
forest management
forests
infrared photography
photography
reforestation
satellite-borne photography
trees (plants)

timber vigor
RT foliage
forests
growth
timberline
trees (plants)

timberline
RT dendrochronology
forests
growth
high altitude environments
polar regions
timber vigor
trees (plants)

time
DEF The hour of the day reckoned by the position of a celestial reference point relative to a reference celestial median. Used for duration.
UF *duration*
GS **time**
. access time
. burning time
. downtime
. ephemeris time
. flight time
. MTBF
. reaction time
. . chronaxy
. relaxation time
. response time (computers)
. sidereal time
. testing time
. transit time
. universal time
RT calendars
celestial geodesy
chronology
exposure
intervals
launch dates
month
prolongation
relativistic effects
schedules
synchronism
time measurement
units of measurement

time constant
DEF Generally, the time required for an instrument to indicate a given percentage of the final reading resulting from an input signal; the relaxation time of an instrument.
GS constants
. **time constant**
. . perceptual time constant
RT access time
∞ constant
damping
dynamic characteristics
dynamic response
impedance
LC circuits
RC circuits
reaction time
relaxation time
RL circuits
RLC circuits
∞ time response
transfer functions
transient response

time delay
USE time lag

time dependence
GS dependence
. time dependence
RT ∞ Helmholtz equations
spatial dependencies
stochastic processes
temporal distribution
∞ time response

time discrimination
RT comparator circuits
sensory discrimination

time division multiple access
DEF Radio transmission method in which each station of a satellite communication network is assigned a time schedule for transmission (in lieu of frequency division); a multi-element antenna with an adaptive null steering array eliminates interference. Used for TDMA.
UF *TDMA*
GS telecommunication
. multiple access
. . time division multiple access
. radio communication
. . radio relay systems
. . . time division multiple access
transmission
. signal transmission
. . data transmission
. . . multiple access
. . . . time division multiple access
RT Aloha system
channel noise
frequency division multiple access
multichannel communication
packet switching
pulse communication
satellite networks
switching
wideband communication

time division multiplexing
DEF A system for the transmission of information about two or more quantities (measurands) over a common channel by dividing available time intervals among the measurands to form a composite pulse train.
GS transmission
. multiplexing
. . time division multiplexing
RT demultiplexing
frequency division multiplexing
pulse modulation
telemetry
television transmission
wavelength division multiplexing

time functions
GS functions (mathematics)
. time functions
RT rates (per time)
square waves
stochastic processes
wave functions
waveforms
wavelet analysis

time lag
DEF The total time between the application of a signal to a measuring instrument and the full indication of that signal within the uncertainty of the instrument. Used for chronotrons, lag (delay), and time delay.
UF *chronotrons*
lag (delay)
time delay
RT cepstral analysis
delay
delay lines
electric relays
hysteresis
inventory controls
reaction time
refractory period
responses
schedules
∞ time response
transmission rate (communications)

time lapse photography
USE chronophotography

time marching
DEF Techniques for solving a problem with partial differential equations that have a time derivation.
RT finite difference theory
numerical analysis
spatial marching

time measurement
UF *dating*
epochs
timing
GS time measurement
. clock paradox
RT atomic clocks
chronometers
clocks
consecutive events
frequency measurement
∞ measurement
oscillographs
radioactive age determination
rates (per time)
sidereal time
stroboscopes
synchronism
time
∞ time response
timing devices
velocity
velocity measurement
windows (intervals)

time measuring instruments
GS measuring instruments
. time measuring instruments
. . clocks
. . . atomic clocks
. . . autonomous spacecraft clocks
. . . chronometers
. . timing devices

time of flight spectrometers
GS measuring instruments
. spectrometers
. . time of flight spectrometers
RT spectroscopy

time optimal control
GS automatic control
. optimal control
. . time optimal control
optimization
. optimal control
. . time optimal control
RT ∞ control

∞ time response
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT access time
delay
response bias
responses
temporal distribution
time constant
time dependence
time lag
time measurement

time series analysis
RT ∞ applications of mathematics
autocorrelation
autoregressive moving average
correlation
curve fitting
data sampling
extrapolation
forecasting
Fourier analysis
Kalman–Schmidt filtering
maximum entropy method
scheduling
∞ statistics
stochastic processes
trend analysis
trends

time sharing
DEF A mode of operation that permits two or more users to execute computer programs concurrently on the same computer system by interleving the execution of theprogram. Time sharing may be implemented by time slicing, priority-based interrupts, or other scheduling methods.
RT computer programming
coordination
multiple output programs
multiprocessing (computers)
multiprogramming
pipelining (computers)
run time (computers)

time signals
DEF Accurate signals marking specified times or time intervals. They are used primarily for determining errors of timepieces. Such signals are usually sent from an observatory by radio or telegraph.
RT clock paradox
frequency standards
picosecond pulses
pulse duration
∞ signals
timing devices

time temperature parameter
RT aging (metallurgy)
austenitic stainless steels
embrittlement
fracture mechanics
long term effects
metallography
precipitation hardening
temperature effects

timers
USE timing devices

timing
USE time measurement

timing devices
UF *timers*
GS measuring instruments
. time measuring instruments
. . **timing devices**
RT chronometers
clock paradox
clocks
dwell
pendulums
tachometers
time measurement
time signals

Timoshenko beams
DEF Simple structural units used by Stephen Timoshenko as models in developing analysis equations for deflections and deformations of beams and columns under load.
GS structural members
. beams (supports)
. . **Timoshenko beams**
RT columns (supports)
trusses

tin
GS chemical elements
. **tin**
. . tin isotopes
metals
. **tin**
. . tin isotopes

tin alloys
GS alloys
. **tin alloys**
. . babbitt metal
RT bearing alloys
bismuth alloys
indium alloys
solders
stannides
Zircaloys (trademark)

tin compounds
GS **tin compounds**
. organic tin compounds
. stannates
. stannides
. . niobium stannides
. tin oxides
. tin tellurides
RT ∞ chemical compounds
Group 4A compounds
∞ metal compounds

tin isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **tin isotopes**
. tin
. . **tin isotopes**
metals
. tin
. . **tin isotopes**

tin oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **tin oxides**
tin compounds
. **tin oxides**
RT SIS (semiconductors)

tin tellurides
GS chalcogenides
. tellurides
. . **tin tellurides**
tellurium compounds
. tellurides
. . **tin tellurides**
tin compounds
. **tin tellurides**

tip driven rotors
UF *hot cycle propulsion system*
GS airfoils
. wings
. . rotary wings
. . . **tip driven rotors**
rotating bodies
. rotors
. . rotary wings
. . . **tip driven rotors**
RT XV-9A aircraft

tip speed
GS rates (per time)
. **tip speed**
velocity
. **tip speed**
RT angular velocity
critical velocity
rotor speed

tip vanes
DEF Wing mounted rotor tips with their spans oriented approximately parallel to the local free stream to increase the capture area and power output of the rotor.
GS rotating bodies
. rotors
. . **tip vanes**
turbomachinery
. turbines
. . wind turbines
. . . **tip vanes**

tips
GS **tips**
. blade tips
. crack tips
. nose tips
. wing tips
RT airfoil profiles
edges

tires
GS **tires**
. aircraft tires
RT blowouts
inflatable structures
landing gear
rollers
toroidal wheels
treads
vehicle wheels
wheel brakes
wheels

TIROS M
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **TIROS M**
RT ITOS 1
ITOS 2
ITOS 3
ITOS 4
ITOS satellites

TIROS N series satellites
DEF A new term for the family of satellites designed to prototype Tiros N.
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **TIROS N series satellites**
. . . . NOAA 6 satellite
RT Advanced Microwave Sounding Unit
Advanced Very High Resolution Radiometer
ITOS 1
ITOS 2
ITOS 3
ITOS 4
ITOS satellites
NOAA 7 satellite
TIROS operational satellite system

TIROS operational satellite system
RT cloud photography
ITOS 1
ITOS 2
ITOS 3
ITOS 4
satellite observation
∞ systems
TIROS N series satellites

TIROS project
GS programs
. NASA programs
. . NASA space programs
. . . **TIROS project**
. projects
. . **TIROS project**
. space programs
. . NASA space programs
. . . **TIROS project**
RT cloud photographs
cloud photography
meteorological satellites

TIROS satellites
DEF A series of NASA and NOAA satellites launched to monitor the Earth's weather. Those funded by NASA are called TIROS, and those funded by NOAA are called ESSA.
GS artificial satellites
. meteorological satellites
. . **TIROS satellites**
. . . ITOS satellites
. . . . ITOS 1
. . . . ITOS 2
. . . . ITOS 3
. . . . ITOS 4
. . . TIROS 1 satellite
. . . TIROS 2 satellite
. . . TIROS 3 satellite
. . . TIROS 4 satellite
. . . TIROS 5 satellite
. . . TIROS 6 satellite
. . . TIROS 7 satellite
. . . TIROS 8 satellite
. . . TIROS 9 satellite
. . . TIROS 10 satellite
. . . TIROS M
. . . TIROS N series satellites
. . . . NOAA 6 satellite
RT cloud photography
ESSA satellites
polar orbits
satellite observation

TIROS 1 satellite
GS artificial satellites
. meteorological satellites

. . TIROS satellites
. . . TIROS 1 satellite
RT Thor Able rocket vehicle

TIROS 2 satellite
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . TIROS 2 satellite
RT Delta launch vehicle

TIROS 3 satellite
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . TIROS 3 satellite
RT Delta launch vehicle

TIROS 4 satellite
UF *TIROS D satellite*
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . TIROS 4 satellite
RT Delta launch vehicle

TIROS 5 satellite
UF *TIROS E satellite*
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . TIROS 5 satellite
RT Delta launch vehicle

TIROS 6 satellite
UF *TIROS F satellite*
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . TIROS 6 satellite
RT Delta launch vehicle

TIROS 7 satellite
UF *TIROS G satellite*
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . TIROS 7 satellite
RT Delta launch vehicle

TIROS 8 satellite
UF *TIROS H satellite*
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . TIROS 8 satellite
RT Delta launch vehicle

TIROS 9 satellite
UF *TIROS wheel satellite*
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . TIROS 9 satellite
RT Delta launch vehicle

TIROS D satellite
USE TIROS 4 satellite

TIROS E satellite
USE TIROS 5 satellite

TIROS F satellite
USE TIROS 6 satellite

TIROS G satellite
USE TIROS 7 satellite

TIROS H satellite
USE TIROS 8 satellite

TIROS 10 satellite
GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . TIROS 10 satellite
RT Delta launch vehicle

TIROS wheel satellite
USE TIROS 9 satellite

tissues (biology)
GS tissues (biology)
. adipose tissues
. endothelium
. epicardium
. epithelium
. hypodermis
. neuroglia
. plantar tissues
. scars
RT anatomy
atrophy
∞ biology
cancer
∞ cells
cells (biology)
cultivation
cystic fibrosis
cysts
fibroblasts
fibrosis
histochemical analysis
infarction
macrophages
mediastinum
organs
peritoneum

Titan
DEF A satellite of Saturn orbiting at a mean distance of 1,222,000 kilometers.
GS celestial bodies
. natural satellites
. . Saturn satellites
. . . Titan
RT atmospheric composition
Cassini mission
Charon
Huygens probe
satellite atmospheres
Saturn (planet)
Triton

Titan 1 ICBM
UF *SM-68 missile*
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Titan ICBM
. . . . Titan 1 ICBM
. surface to surface missiles
. . intercontinental ballistic missiles
. . . Titan ICBM
. . . . Titan 1 ICBM
RT LR-87-AJ-5 engine

Titan 2 ICBM
UF *SM-68B missile*
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Titan ICBM
. . . . Titan 2 ICBM
. surface to surface missiles
. . intercontinental ballistic missiles
. . . Titan ICBM
. . . . Titan 2 ICBM
RT Hyla-Star rocket vehicle

Titan 3 launch vehicle
GS launch vehicles
. Titan launch vehicles
. . Titan 3 launch vehicle
rocket vehicles
. multistage rocket vehicles
. . Titan launch vehicles
. . . Titan 3 launch vehicle
RT manned orbital laboratories

Titan 4 launch vehicle
(added February 1993)
GS launch vehicles
. Titan launch vehicles
. . Titan 4 launch vehicle
rocket vehicles
. multistage rocket vehicles
. . Titan launch vehicles
. . . Titan 4 launch vehicle
RT Titan Centaur launch vehicle
∞ vehicles

Titan Centaur launch vehicle
DEF A Titan III rocket augmented with a Centaur rocket for launching spacecraft requiring high-velocity escape trajectories.
GS launch vehicles
. Titan Centaur launch vehicle
rocket vehicles
. Titan Centaur launch vehicle
RT Centaur launch vehicle
Titan 4 launch vehicle

Titan ICBM
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Titan ICBM
. . . . Titan 1 ICBM
. . . . Titan 2 ICBM
. surface to surface missiles
. . intercontinental ballistic missiles
. . . Titan ICBM
. . . . Titan 1 ICBM
. . . . Titan 2 ICBM
RT liquid propellant rocket engines
LR-91-AJ-5 engine
multistage rocket vehicles
YLR-91-AJ-1 engine

Titan launch vehicles
GS launch vehicles
. Titan launch vehicles
. . Titan 3 launch vehicle
. . Titan 4 launch vehicle
rocket vehicles
. multistage rocket vehicles
. . Titan launch vehicles
. . . Titan 3 launch vehicle
. . . Titan 4 launch vehicle
RT Gemini 3 flight
Gemini 7 flight
Gemini 8 flight
Gemini 9 flight
Gemini 10 flight
Gemini 11 flight
Gemini 12 flight
liquid propellant rocket engines
solid propellant rocket engines
∞ vehicles

Titan project
GS programs
. NASA programs
. . NASA space programs
. . . Titan project
. projects
. . Titan project

. space programs
. . NASA space programs
. . . Titan project
RT ∞ boosters
Gemini project
Gemini spacecraft
launch vehicles
launchers
launching

titanates
GS titanium compounds
. titanates
. . barium titanates
. . ilmenite
. . lead titanates
. . . lead zirconate titanates
. . magnesium titanates
. . perovskites
. . strontium titanates
. . zirconium titanates
. . . lead zirconate titanates
RT euxenite

Titania
DEF A satellite of Uranus orbiting at a mean distance of 436,000 kilometers.
GS celestial bodies
. natural satellites
. . icy satellites
. . . Titania
. . Uranus satellites
. . . Titania
RT Uranus (planet)

titanium
GS chemical elements
. titanium
. . titanium isotopes
metals
. transition metals
. . titanium
. . . titanium isotopes

titanium alloys
GS alloys
. titanium alloys
. . nitinol alloys
RT aluminides
shape memory alloys
titanium aluminides
vanadium alloys

titanium aluminides
(added June 1997)
GS aluminum compounds
. aluminides
. . titanium aluminides
titanium compounds
. titanium aluminides
RT intermetallics
titanium alloys

titanium borides
GS boron compounds
. borides
. . titanium borides
titanium compounds
. titanium borides

titanium carbides
GS carbon compounds
. carbides
. . titanium carbides
titanium compounds
. titanium carbides
RT ceramic fibers
ceramic matrix composites

titanium chlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . titanium chlorides
. halides
. . chlorides
. . . titanium chlorides
. . metal halides
. . . titanium chlorides
titanium compounds
. titanium chlorides

titanium compounds
GS titanium compounds
. titanates
. . barium titanates
. . ilmenite
. . lead titanates
. . . lead zirconate titanates
. . magnesium titanates
. . perovskites
. . strontium titanates
. . zirconium titanates
. . . lead zirconate titanates
. titanium borides
. titanium carbides
. titanium chlorides
. titanium nitrides
. titanium oxides
. . anatase
. . ilmenite
. . rutile
. titanium aluminides
RT ∞ chemical compounds
Group 4B compounds
∞ metal compounds

titanium dioxide
USE titanium oxides

titanium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . titanium isotopes
. titanium
. . titanium isotopes
metals
. transition metals
. . titanium
. . . titanium isotopes

titanium nitrides
GS nitrogen compounds
. nitrides
. . metal nitrides
. . . titanium nitrides
titanium compounds
. titanium nitrides
RT ceramic matrix composites

titanium oxides
UF *titanium dioxide*
GS chalcogenides
. oxides
. . metal oxides
. . . titanium oxides
. . . . anatase
. . . . ilmenite
. . . . rutile
titanium compounds
. titanium oxides
. . anatase
. . ilmenite
. . rutile
RT dioxides

titration
DEF The determination of the reactive capacity, usually of a solution, especially, the analytical process of successively adding measured amounts of a reagent (as a standard solution) to a known volume or weight of a sample or sample solution until a desired end point is reached.
GS chemical reactions
. titration
RT acidity
coulometers
iodimetry
ion concentration
Kjeldahl method
solutions

titrimeters
GS measuring instruments
. titrimeters
RT chemical analysis

TNT (trinitrotoluene)
USE trinitrotoluene

tobacco
GS plants (botany)
. tobacco
RT nicotine

tocopherol
UF *vitamin E*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . tocopherol
. lipids
. . tocopherol
vitamins
. tocopherol

Togo
GS nations
. Togo
RT Africa

toilets
RT human wastes
sanitation
spacecrews
waste disposal

tokamak devices
DEF Experimental toroidal magnetic confinement devices where toroidal current runs through the plasma in order to produce fusion reactor like plasma conditions. The name is a Russian acronym for toroidal magnetic current.
GS nuclear reactors
. tokamak devices
. . Joint European Torus
plasma generators
. tokamak devices
. . Joint European Torus
RT beam injection
beta factor
bumpy toruses
divertors (fusion reactors)
∞ electric power
limiters (fusion reactors)
nuclear fusion
plasma compression
plasma control
plasma physics
poloidal flux
Q values (nuclear physics)
∞ reactors
spheromaks

tolerances (mechanics)
DEF A group of prescribed limits for specific properties of a particular material.
GS tolerances (mechanics)
. impact tolerances
RT acceptability
accuracy
allowances
clearances
consistency
dimensional stability
drift (instrumentation)
errors
hysteresis
inspection
linearity
mechanical properties
nondestructive tests
precision
quality control
radiation tolerance
range (extremes)
reliability
resolution
sensitivity
specifications
stability
standards

tolerances (physiology)
GS tolerances (physiology)
. acceleration tolerance
. altitude tolerance
. cold tolerance
. heat tolerance
. human tolerances
. radiation tolerance
RT acclimatization
Barany chair
biocontrol systems
impact resistance
noise tolerance
orthostatic tolerance
physiology
range (extremes)
∞ resistance

Tollmien-Schlichting waves
(added May 1988)
GS elastic waves
. Tollmien-Schlichting waves
RT Blasius flow
boundary layer flow
boundary layer transition
laminar flow
turbulent flow

toluene
GS organic compounds
. hydrocarbons
. . toluene
RT solvents
xylene

Tomahawk missiles
GS missiles
. surface to surface missiles
. . cruise missiles
. . . Tomahawk missiles
RT weapons

tomatoes
(added June 1990)
GS farm crops
. tomatoes
RT agriculture
botany
∞ crops
∞ food
seeds

tomboios
USE bars (landforms)

tomography
DEF Technique of making radiographs of plane sections of a body or an object; its purpose is to show detail in a predetermined plane of the body, while blurring the images of structures in other planes. Used for planigraphy.
UF *planigraphy*
GS imagery
. radiography
. . tomography
. . . computer aided tomography
RT computer graphics
ground penetrating radar
image enhancement
optical data processing
x ray analysis

TOMS
USE Total Ozone Mapping Spectrometer

tone
USE pitch

tongue
GS anatomy
. digestive system
. . tongue
RT mouth
voice

Tonk meteorite
GS celestial bodies
. meteorites
. . stony meteorites
. . . carbonaceous meteorites
. . . . carbonaceous chondrites
. . . . . Tonk meteorite
. . . chondrites
. . . . carbonaceous chondrites
. . . . . Tonk meteorite

tonometry
USE intraocular pressure
pressure measurement

tonus
USE muscular tonus

tooling
RT ∞ automation
machining
mechanization
setups
tools

tools
GS tools
. drill bits
. drills
. files (tools)
. hammers
. . electromagnetic hammers
. machine tools
. . boring machines
. . grinding machines
. . lathes
. . . turret lathes
. . milling machines
. . shapers
. saws
. shears
. software development tools
. space tools
. wrenches
RT antiquities
anvils
cutters
fixtures
hardware
jigs
kits
∞ machinery
mechanical devices
mechanization
platens
presses
∞ production
taps
tooling
ultrasonic cleaning

tooth diseases
UF aerodontalgia
GS diseases
. tooth diseases
RT cavities
dental calculi
dentistry
oral hygiene
teeth

TOPEX
DEF The NASA Ocean Surface Topography Experiment, a proposed mission to utilize satellite altimetry to map the surface topography of the ocean from which the ocean currents are derived.
RT Gulf Stream
maritime satellites
ocean currents
ocean surface
oceanography
Poseidon satellite
satellite observation
sea states
topography

topography
UF *landscape*
GS topography
. lunar topography
. terrain
RT altimetry
badlands
barren land
beaches
cliffs
contour sensors
contours
cusps (landforms)
∞ depression
desertline
deserts
dunes
Earth surface
elevation
elevation angle
escarpments
geodesy
geodetic surveys
geomorphology
geophysics
gulfs
highlands
hypsography
isthmuses
Jupiter red spot
lagoons
land

landforms
landmarks
ledges
mapping
maria
Mars surface
meanders
muskegs
oceanography
peaks (landforms)
photomapping
plains
planetary surfaces
∞ profiles
ravines
relief maps
satellite altimetry
shallow water
slopes
stairsteps
surface roughness
TOPEX
valleys
Venus surface
wadis

topology
GS geometry
. **topology**
. . fixed points (mathematics)
. . homotopy theory
. . imbeddings (mathematics)
. . . invariant imbeddings
. . links (mathematics)
. . metric space
. . . Hilbert space
. . . . Sobolev space
RT catastrophe theory
∞ cells
continuity
continuity (mathematics)
continuums
deformation
dimensions
fault trees
fibers (mathematics)
graph theory
homology
homotropy
intervals
isoperimetric problem
manifolds (mathematics)
mapping
∞ nets
network synthesis
shapes
switching theory
toruses
trees (mathematics)

topping cycle engines
RT aircraft engines
liquid hydrogen
propulsion system configurations

TOPS (spacecraft)
UF *Thermoelectric Outer Planet Spacecraft*
thermoelectric spacecraft
GS interplanetary spacecraft
. **TOPS (spacecraft)**
RT flyby missions
interplanetary flight
outer planets explorers
space exploration
space missions
∞ spacecraft

torches
GS **torches**
. plasma torches
RT cutting
pyrogen
welding
welding machines

Tornado aircraft
USE **MRCA aircraft**

tornadoes
GS storms
. storms (meteorology)
. . **tornadoes**
RT atmospheric circulation
cold fronts
cumulonimbus clouds
cyclones
fronts (meteorology)
Fujita method
ground wind
hurricanes
National Severe Storms Project
rainstorms
storm damage
tropical storms
typhoons
warm fronts
wind (meteorology)

Toro asteroid
GS celestial bodies
. asteroid belts
. . **Toro asteroid**
. asteroids
. . **Toro asteroid**
RT meteoroids
solar system
space debris

toroidal discharge
GS electric current
. electric discharges
. . Townsend discharge
. . . gas discharges
. . . . **toroidal discharge**
. . . . ring discharge
RT electrodeless discharges
high frequencies
plasma jets
spectrum analysis

toroidal plasmas
UF *plasma rings*
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **toroidal plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **toroidal plasmas**
RT beam injection
beta factor
bumpy toruses
elliptical plasmas
limiters (fusion reactors)
plasma control
plasma currents
poloidal flux
reverse field pinch
∞ rings
rotating plasmas
solenoids
spheromaks
stellarators

toroidal shells
GS shells (structural forms)
. **toroidal shells**
RT metal shells
reinforced shells
skin (structural member)
thin walled shells
toroids

toroidal wheels
DEF Doughnut–shaped wheels designed particularly for vehicles used in soft, granular soil (planetary surfaces). Used for doughnut shape wheels.
UF *doughnut shape wheels*
GS wheels
. **toroidal wheels**
RT roving vehicles
suspension systems (vehicles)
tires
vehicle wheels

toroids
RT ∞ coils
∞ curves
geometry
inductors
ion impact
magnet coils
magnetic cores
toroidal shells
transformers

torpedo engines
GS engines
. **torpedo engines**
. . turborocket engines
. . ullage rocket engines
. . Vernier engines
. . . control rockets
. . . SYNCOM apogee engines
RT internal combustion engines
rocket propellants
turbine engines
underwater propulsion

torpedoes
UF *RETORC (torpedoes)*
GS explosive devices
. **torpedoes**
RT ammunition
antisubmarine warfare
ASROC engine
bombs (ordnance)
∞ configurations
countermeasures
explosives
hydroballistics
missiles
nuclear weapons
propellants
∞ rockets
sea launching
shaped charges
submerged bodies
underwater trajectories
warheads
weapons

torque
DEF About an axis, the product of a force and the distance of its line of action from the axis. Used for hinge moments.
UF *hinge moments*
GS moments
. **torque**
RT bending moments
∞ force

loading moments
moments of inertia
pitching moments
rolling moments
rotation
shafts (machine elements)
torque sensors (robotics)
torquemeters
torsion
torsional stress
torsional vibration
twisting
yawing moments

torque converters
DEF Devices for changing the torque speed or mechanical advantage between an input shaft and an output shaft.
RT ∞ converters
power converters
transmissions (machine elements)

torque measuring apparatus
USE **torquemeters**

torque motors
GS motors
. electric motors
. . torque motors
RT actuators
servomotors
transmissions (machine elements)

torque sensors (nonrobotics)
USE **torquemeters**

torque sensors (robotics)
(added January 1991)
GS robot sensors
. torque sensors (robotics)
RT end effectors
manipulators
robots
∞ sensors
servomechanisms
teleoperators
torque
torquemeters

torquemeters
UF *torque measuring apparatus*
torque sensors (nonrobotics)
GS measuring instruments
. torquemeters
RT dynamometers
mechanical measurement
torque
torque sensors (robotics)

torquers
GS transducers
. torquers
RT degrees of freedom
gyroscopes
sea keeping

Torres Strait
GS passageways
. straits
. . Torres Strait
RT Australia
New Guinea (island)

torsion
RT buckling
deflection
deformation
∞ force
moments
temperature inversions
torque
torsional stress
torsional vibration
twisting

torsional stress
GS stresses
. shear stress
. . torsional stress
RT torque
torsion

torsional vibration
GS vibration
. structural vibration
. . torsional vibration
RT missile vibration
random vibration
self induced vibration
shear strain
torque
torsion
twisting

torso
GS anatomy
. torso
RT chest

toruses
GS geometry
. Euclidean geometry
. . analytic geometry
. . . toruses
symmetrical bodies
. bodies of revolution
. . toruses
RT descriptive geometry
loops
∞ rings
topology

Tory 2 reactor
GS nuclear electric power generation
. nuclear power reactors
. . Tory 2 reactor
nuclear reactors
. gas cooled reactors
. . Tory 2 reactor
. nuclear power reactors
. . Tory 2 reactor
. nuclear research and test reactors
. . Tory 2 reactor

Tory 2–A reactor
GS nuclear electric power generation
. nuclear power reactors
. . Tory 2–A reactor
nuclear reactors
. gas cooled reactors
. . Tory 2–A reactor
. nuclear power reactors
. . Tory 2–A reactor
. nuclear research and test reactors
. . Tory 2–A reactor

Tory 2–C reactor
GS nuclear electric power generation
. nuclear power reactors
. . Tory 2–C reactor
nuclear reactors
. gas cooled reactors
. . Tory 2–C reactor
. nuclear power reactors
. . Tory 2–C reactor
. nuclear research and test reactors
. . Tory 2–C reactor

TOS–A
USE **ESSA 3 satellite**

total energy systems
DEF Energy systems which supply both electrical and heat requirements.
GS total energy systems
. solar total energy systems
RT integrated energy systems
phosphoric acid fuel cells
∞ systems

Total Ozone Mapping Spectrometer
(added July 1988)
UF *TOMS*
GS measuring instruments
. optical measuring instruments
. . photometers
. . . ultraviolet spectrometers
. . . . Total Ozone Mapping Spectrometer
. radiation measuring instruments
. . actinometers
. . . ultraviolet detectors
. . . . ultraviolet spectrometers
. . . . . Total Ozone Mapping Spectrometer
. . photometers
. . . ultraviolet spectrometers
. . . . Total Ozone Mapping Spectrometer
. satellite-borne instruments
. . Total Ozone Mapping Spectrometer
. spectrometers
. . ultraviolet spectrometers
. . . Total Ozone Mapping Spectrometer
optical equipment
. optical measuring instruments
. . photometers
. . . ultraviolet spectrometers
. . . . Total Ozone Mapping Spectrometer
RT Antarctic regions
Nimbus 7 satellite
ozone depletion
ozonometry

total quality management
(added February 1992)
UF *TQM (quality control)*
GS management
. total quality management
quality control
. total quality management
RT acceptability
aircraft reliability
concurrent engineering
industrial management
management methods
production management
quality
reliability
reliability engineering
value engineering

total variation diminishing schemes
USE **TVD schemes**

touch
UF *cutaneous perception*
tactile sensation
GS perception
. sensory perception
. . touch
. . . tactile discrimination
RT electrocutaneous communication

skin (anatomy)
tactile sensors (robotics)

touchdown
GS landing
. **touchdown**
RT aircraft landing
approach
approach and landing tests (STS)
downrange
spacecraft landing
vertical landing
vertical motion
water landing

toughness
DEF That property of a material by virtue of which it can absorb work.
GS mechanical properties
. **toughness**
. . notch sensitivity
RT abrasion resistance
brittleness
compressive strength
crack initiation
ductility
fracture strength
hardness
impact tests
J integral
shear properties
tensile strength
wear resistance

tourmaline
GS aluminum compounds
. **tourmaline**
boron compounds
. **tourmaline**
minerals
. **tourmaline**
silicon compounds
. silicates
. . sodium silicates
. . . **tourmaline**
sodium compounds
. sodium silicates
. . **tourmaline**
RT igneous rocks

Tournesole satellite
USE **D-2 satellites**

tourniquets
GS medical equipment
. **tourniquets**
RT blood circulation
blood flow
first aid

Toutatis asteroid
(added July 1995)
GS celestial bodies
. asteroids
. . **Toutatis asteroid**
RT asteroid belts
meteoroids

tow missiles
GS missiles
. surface to surface missiles
. . antitank missiles
. . . **tow missiles**

towed bodies
UF *drogues*
towed targets
RT aircraft brakes
∞ bodies
brakes (for arresting motion)
drag chutes
gliders
lifting bodies
parachutes
sleds
streamlined bodies
submerged bodies
test vehicles
tetherlines
towing
trailers

towed targets
USE **targets**
towed bodies

Tower Shielding Reactor 2
GS nuclear reactors
. nuclear research and test reactors
. . **Tower Shielding Reactor 2**
RT radiation shielding

towers
GS **towers**
. airport towers
. umbilical towers
RT air traffic control
antennas
bridges (structures)
columns (supports)
concrete structures
construction industry
cranes
pylons
∞ structures
tanks (containers)

towing
RT cables (ropes)
towed bodies
tractors
trailers

Townsend avalanche
UF *townsend surfaces*
GS avalanches
. **Townsend avalanche**
RT electromagnetic absorption
electron avalanche
ion impact
secondary emission
∞ surfaces

Townsend discharge
DEF A type of direct current discharge between two electrodes immersed in a gas and requiring electron emission from the cathode.
GS electric current
. electric discharges
. . **Townsend discharge**
. . . gas discharges
. . . . toroidal discharge
. . . . . ring discharge
RT electrodeless discharges
ion impact

townsend surfaces
USE **Townsend avalanche**

toxic diseases
UF *poisoning (toxicology)*
GS diseases
. **toxic diseases**
. . benzene poisoning
. . beryllium poisoning
. . carbon monoxide poisoning
. . carbon tetrachloride poisoning
. . hydrocarbon poisoning
. . lead poisoning
RT Clostridium botulinum
diphtheria
hyperoxia
∞ poisoning
toxicity
toxicology

toxic hazards
GS hazards
. **toxic hazards**
RT aircraft hazards
flight hazards
hazardous materials
hazardous wastes
occupational diseases
∞ poisoning
toxicity

toxicity
GS **toxicity**
. benzene poisoning
. beryllium poisoning
. carbon monoxide poisoning
. carbon tetrachloride poisoning
. hydrocarbon poisoning
. lead poisoning
RT acidosis
alkalosis
chemical properties
endangered species
herbicides
hyperoxia
poisons
toxic diseases
toxic hazards
toxicology
toxins and antitoxins
virulence

toxicity and safety hazard
GS inflation
. **toxicity and safety hazard**
RT acroleins
benzene poisoning
beryllium poisoning
carbon tetrachloride poisoning
chemical properties
hazardous material disposal (in space)
hydrocarbon poisoning
intoxication
soil pollution

toxicology
RT benzene poisoning
beryllium poisoning
carbon tetrachloride poisoning
curare
endotoxins
fungicides
hazards
hemoperfusion
hydrocarbon poisoning
insecticides
intoxication
nonpoint sources
pesticides
pollution
red tide
toxic diseases
toxicity
vaccines

toxins and antitoxins
GS **toxins and antitoxins**
. endotoxins
. polybrominated biphenyls
RT hazardous materials

immunity
toxicity
vaccines

TQM (quality control)
USE **total quality management**

TRAAC satellite
USE **Transit Attitude Control satellite**

trace contaminants
GS contaminants
. **trace contaminants**
RT chemical elements
impurities
pollution transport
purity
∞ tracing

trace elements
RT isotopic labeling
∞ nutrients
particle tracks
∞ tracers
∞ tracing

∞ **tracers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ammunition
isotopic labeling
marking
trace elements

trachea
GS anatomy
. respiratory system
. . **trachea**
RT bronchi
∞ tubes

trachyte
GS rocks
. igneous rocks
. . **trachyte**
RT soils
syenite

∞ **tracing**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT drawings
trace contaminants
trace elements

tracked vehicles
DEF Land vehicles equipped with continuous roller belts over cogged wheels for moving over rough terrain.
GS surface vehicles
. motor vehicles
. . tractors
. . . **tracked vehicles**
RT crawler tractors
∞ vehicles
vehicular tracks

tracking (position)
UF *target tracking*
tracking studies
GS **tracking (position)**
. compensatory tracking
. infrared tracking
. missile tracking
. multiple target tracking
. optical tracking
. photographic tracking
. polystation doppler tracking system
. pursuit tracking
. radar tracking
. radio tracking
. . wildlife radiolocation
. range and range rate tracking
. space detection and tracking system
. spacecraft tracking
. . satellite tracking
. . . satellite-to-satellite tracking
. star trackers
. . CCD star tracker
. video landmark acquisition and tracking
RT air traffic control
aircraft detection
approach control
detection
identifying
instrument landing systems
laser ranger/tracker
multispectral tracking telescopes
position (location)
rangefinding
ray tracing
satellite doppler positioning
solar sensors
sound localization
sound ranging
tracking problem
∞ tracks

Tracking and Data Relay Satellites
USE **TDR satellites**

tracking antennas
USE **directional antennas**

tracking filters
DEF Electron devices for attenuating unwanted signals while passing desired signals, by means of phase lock techniques which reduce the effective bandwidth of the circuit and eliminate amplitude variations.
GS electromagnetic wave filters
. bandpass filters
. . **tracking filters**
. electric filters
. . **tracking filters**
RT adaptive filters
bandstop filters
bandwidth
multiple target tracking
phase locked systems
video landmark acquisition and tracking

tracking networks
GS networks
. **tracking networks**
. . Deep Space Network
. . Global Tracking Network
. . manned space flight network
. . MATTS (systems)
. . polystation doppler tracking system
. . radar networks
. . space detection and tracking system
. . Space Flight Tracking and Data Network
. . STDN (network)
RT Advanced Range Instrumentation Ship
data acquisition
ground support equipment
minitrack system
missile tracking
Orion (radio interferometry network)
satellite tracking
satellite-to-satellite tracking
spacecraft tracking

tracking problem
DEF The problem of controlling a system so that the output follows a given path.
RT automatic control
control theory
feedback control
linear systems
multiple target tracking
nonlinear systems
optimal control
output
∞ problems
tracking (position)
trajectory control
trajectory optimization

tracking radar
DEF A radar used for following a target.
GS radar
. **tracking radar**
. . Cobra Dane (radar)
RT coherent radar
continuous wave radar
digital radar systems
monopulse radar
pulse radar
radar tracking
satellite-borne radar
search radar
surveillance radar
TRADEX radar system
trajectory measurement

tracking stations
DEF Stations set up to track objects moving through the atmosphere or space, usually by means of radio or radar.
GS stations
. **tracking stations**
. . Deep Space Instrumentation Facility
. . Global Tracking Network
. . polystation doppler tracking system
RT ∞ fences
ground stations
ground support equipment
Jodrell Bank Observatory
∞ mars
minitrack system
missile tracking
radar networks
satellite tracking
space detection and tracking system
Space Flight Tracking and Data Network
spacecraft tracking
STDN (network)

tracking studies
USE **tracking (position)**

∞ **tracks**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *trails*
RT conveyors
ground tracks
meteor trails
minitrack system
particle tracks
particle trajectories
smoke trails
tracking (position)
vehicular tracks

traction
RT adhesion
friction

pulling

tractors
GS surface vehicles
. motor vehicles
. . tractors
. . . crawler tractors
. . . tracked vehicles
RT agriculture
electric motor vehicles
ground handling
handling equipment
lunar excavation equipment
materials handling
planting
plowing
sleds
towing
transportation
trucks
∞ vehicles

tracts
USE **sites**

tradeoffs
RT decision making
management analysis
management planning

Trader aircraft
USE **C-1A aircraft**

tradescantia
GS plants (botany)
. **tradescantia**

TRADEX radar system
GS radar
. **TRADEX radar system**
RT search radar
∞ systems
target recognition
tracking radar

traffic
GS **traffic**
. air traffic
RT accidents
avoidance
harbors
transportation

traffic control
DEF Control of vehicular traffic such as priority highway lanes, stoplight control, rapid-transit train control, or air traffic control.
GS **traffic control**
. air traffic control
. . automated en route ATC
. . radar approach control
RT air traffic controllers (personnel)
airport towers
approach control
avoidance
collision avoidance
∞ control
ground based control
National Aviation System

tragacanth
GS plants (botany)
. **tragacanth**

Trailblazer 1 reentry vehicle
UF *Trailblazer 1 rocket vehicle*
GS reentry vehicles
. **Trailblazer 1 reentry vehicle**
RT Honest John rocket vehicle
Lance missile
multistage rocket vehicles
Nike-Ajax missile
rocket vehicles
solid propellant rocket engines

Trailblazer 1 rocket vehicle
USE **Trailblazer 1 reentry vehicle**

Trailblazer 2 reentry vehicle
UF *Trailblazer 2 rocket vehicle*
GS reentry vehicles
. **Trailblazer 2 reentry vehicle**
RT multistage rocket vehicles
rocket vehicles
solid propellant rocket engines
TX-354 engine

Trailblazer 2 rocket vehicle
USE **Trailblazer 2 reentry vehicle**

trailers
RT automobiles
couplings
sleds
tank trucks
towed bodies
towing
trucks

trailing edge flaps
UF *variable area wings*
GS airfoils
. flaps (control surfaces)
. . wing flaps
. . . **trailing edge flaps**
brakes (for arresting motion)
. aerodynamic brakes
. . wing flaps
. . . **trailing edge flaps**
. aircraft brakes
. . wing flaps
. . . **trailing edge flaps**
control surfaces
. flaps (control surfaces)
. . wing flaps
. . . **trailing edge flaps**
drag devices
. aerodynamic brakes
. . wing flaps
. . . **trailing edge flaps**
RT jet flaps
leading edge slats
split flaps
vortex flaps

trailing edges
GS edges
. **trailing edges**
. . blunt trailing edges
RT airfoils
blunt leading edges
leading edges
sharp leading edges
vortex flaps

trails
USE **tracks**

trainees
USE **students**

trainers
USE **training devices**

training
USE **education**

training aircraft
GS **training aircraft**
. Alpha jet aircraft
. jet provost aircraft
. L-29 jet trainer
. T-2 aircraft
. T-28 aircraft
. T-33 aircraft
. T-37 aircraft
. T-38 aircraft
. T-39 aircraft
. TS-11 aircraft
RT ∞ aircraft
bomber aircraft
fighter aircraft
general aviation aircraft
jet aircraft
light aircraft
∞ military aircraft
∞ subsonic aircraft

training analysis
DEF Evaluation of all facets of instruction — presentation methods, instructors, effectiveness of training, and testing.
RT ∞ analyzing
∞ development
education
handbooks
learning
personnel development
planning
retraining

training devices
UF trainers
GS **training devices**
. teaching machines
. training simulators
. . flight simulators
. . . cockpit simulators
. . spacecraft cabin simulators
RT altitude simulation
audio visual equipment
child device
cockpit simulators
∞ devices
education
educational television
flight simulators
multimedia
onboard equipment
simulators
visual aids

training evaluation
DEF Procedures for determining the effectiveness of instruction.
GS evaluation
. **training evaluation**
RT certification
examination
instructors
knowledge
learning
∞ performance
reviewing
schools
students

training simulators
UF simulator training
GS simulators
. **training simulators**
. . flight simulators
. . . cockpit simulators
. . spacecraft cabin simulators
training devices
. **training simulators**

. flight simulators
. . . cockpit simulators
. . spacecraft cabin simulators
RT astronaut training
centrifuges
control simulation
flight simulation
flight training
landing simulation
lunar orbit and landing simulators
∞ missile simulators
pilot training
space flight training
virtual reality

trajectories
DEF In general, paths traced by bodies moving as a result of an externally applied force, considered in three dimensions.
GS trajectories
. abort trajectories
. ascent trajectories
. ballistic trajectories
. descent trajectories
. . reentry trajectories
. hyperbolic trajectories
. interorbital trajectories
. midcourse trajectories
. missile trajectories
. molecular trajectories
. particle trajectories
. . electron trajectories
. rendezvous trajectories
. round trip trajectories
. . circumlunar trajectories
. spacecraft trajectories
. . interplanetary trajectories
. . . Earth–Mars trajectories
. . . Earth–Mercury trajectories
. . . Earth–Venus trajectories
. . lunar trajectories
. . . circumlunar trajectories
. . . Earth–Moon trajectories
. . . moon–Earth trajectories
. spinning unguided rocket trajectory
. underwater trajectories
RT apexes
attractors (mathematics)
ballistics
∞ curves
downrange
equations of motion
∞ flight
flight mechanics
flight optimization
flight paths
flight time
great circles
missiles
orbits
ordnance
parabolic flight
∞ paths
rocket flight
space flight
transfer orbits

trajectory analysis
RT ∞ analyzing
astrodynamics
ballistics
capture effect
celestial mechanics
equations of motion
Goddard Trajectory Determination System
impact prediction
mathematical models
numerical analysis
orbital mechanics
preflight analysis
systems analysis
trajectory planning

trajectory control
UF *range control*
GS trajectory control
. trajectory optimization
RT attitude control
∞ control
drift rate
guidance (motion)
homing devices
landing sites
optimal control
optimization
post boost propulsion system
range safety
thrust programming
tracking problem
trajectory planning

trajectory measurement
RT ballistic cameras
ballistics
flight mechanics
∞ measurement
telemetry
tracking radar

trajectory optimization
GS optimization
. trajectory optimization
trajectory control
. trajectory optimization
RT aircraft maneuvers
flight mechanics
flight optimization
genetic algorithms
Goddard Trajectory Determination System
low earth orbits
tracking problem
trajectory planning

trajectory planning
(added December 1990)
UF *path planning*
GS planning
. trajectory planning
RT robot dynamics
robotics
trajectory analysis
trajectory control
trajectory optimization

tranquilizers
GS drugs
. tranquilizers
RT central nervous system depressants
hypertension
sedatives

Transall C–160 aircraft
USE C–160 aircraft

transatmospheric vehicles
RT aerospace planes
aerospace vehicles
∞ aircraft
aircraft design
National Aerospace Plane Program
∞ spacecraft
spacecraft design
X–30 vehicle

transceivers
USE transmitter receivers

transcendental functions
GS functions (mathematics)
. transcendental functions
. . exponential functions
. . . logarithms
. . periodic functions
. . . trigonometric functions
. . . . cosine series
. . . . sine series
. . . . tangents

transconductance
DEF The real part of the transadmittance. Note: Transconductance is, as most commonly used, the interelectrode transconductance between the control grid and the plate. At low frequencies, transconductance is the slope of the control–grid–to–plate transfer characteristic.
GS electrical properties
. electrical impedance
. . electrical resistance
. . . transconductance
impedance
. electrical impedance
. . electrical resistance
. . . transconductance
RT ∞ conductivity
electric potential
electrodes
electron tubes
linear circuits
low conductivity
∞ low resistance
ohmmeters
Ohms law
RC circuits
reactance
∞ resistance
RL circuits
RLC circuits
solid electrodes
volt–ampere characteristics

transcontinental systems
RT contin[illegible]s
∞ systems
telecommunication
transportation

transducers
DEF Devices capable of being actuated by energy from one or more other transmission systems or media and of supplying related energy to one or more other transmission systems or media as microphones or thermocouples.
GS transducers
. digital transducers
. electronic transducers
. image transducers
. interdigital transducers
. magnetic transducers
. mode transformers
. piezoelectric transducers
. . piezoelectric gages
. piezoresistive transducers
. . piezoelectric gages
. pressure sensors
. . Bourdon tubes
. quartz transducers
. sound transducers
. . electroacoustic transducers
. . . hydrophones
. . . loudspeakers
. . . microphones

. thermopiles
. torquers
. ultrasonic wave transducers
RT bulk acoustic wave devices
control equipment
∞ converters
data converters
∞ detectors
energy conversion efficiency
extensometers
form factors
instrument receivers
instrument transmitters
∞ instruments
measuring instruments
meteorological instruments
photoelectric cells
∞ probes
recording instruments
remote sensors
∞ sensors
strain gages
temperature measuring instruments
ultrasonic cleaning
vibration meters

transearth injection
GS injection
. **transearth injection**
RT injection guidance
midcourse guidance
orbital mechanics
transfer orbits

transequatorial propagation
GS transmission
. electromagnetic wave transmission
. . radio transmission
. . . **transequatorial propagation**
. signal transmission
. . radio transmission
. . . **transequatorial propagation**
. wave propagation
. . **transequatorial propagation**
RT equators
F 2 region
∞ propagation

transfer
USE **transferring**

transfer functions
GS functions (mathematics)
. **transfer functions**
. . loop transfer functions
. . modulation transfer function
. . optical transfer function
RT amplification
automatic control
bandwidth
coupling coefficients
damping
dynamic characteristics
dynamic response
feedback
feedback circuits
high gain
impedance matching
logarithmic receivers
negative feedback
nonlinear feedback
Nyquist diagram
output
positive feedback
self oscillation
sensitivity
∞ systems
time constant
transient response

transfer of training
GS learning
. **transfer of training**
RT abilities
education
generalization (psychology)

transfer orbits
DEF In interplanetary travel, elliptical trajectories tangent to the orbits of both the departure planet and the target planet. Used for Hohmann trajectories, Hohmann transfer orbits, and orbital transfer.
UF *Hohmann trajectories*
Hohmann transfer orbits
orbital transfer
GS orbits
. elliptical orbits
. . **transfer orbits**
. . . interplanetary transfer orbits
. spacecraft orbits
. . **transfer orbits**
. . . interplanetary transfer orbits
RT aeroassist
aerobraking
aerocapture
aeromaneuvering
circumlunar trajectories
Earth orbital rendezvous
Earth orbits
Earth–Mars trajectories
Earth–Mercury trajectories
Earth–Moon trajectories
Earth–Venus trajectories
interplanetary trajectories
lunar orbits
lunar trajectories
moon–Earth trajectories
orbit insertion
orbital launching
orbital mechanics
parking orbits
planetary orbits
satellite orbits
solar orbits
space rendezvous
spacecraft docking
trajectories
transearth injection
transferring
translunar injection

transfer RNA
USE **ribonucleic acids**

transfer tunnels
GS passageways
. **transfer tunnels**
RT entrances
∞ tunnels

transferred electron devices
DEF Electronic equipment utilizing diodes exhibiting negative conductance and susceptance. Used for TED.
UF *TED*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . Gunn diodes
. . . . **transferred electron devices**
. solid state devices
. . semiconductor devices
. . . **transferred electron devices**
RT diffraction radiation
electron transfer
gallium arsenides
indium phosphides
microwave amplifiers
microwave oscillators

transferring
UF *transfer*
GS **transferring**
. drop transfer
RT charge transfer
electron transfer
energy transfer
exchanging
heat transfer
mass transfer
materials handling
momentum transfer
∞ shift
technology transfer
transfer orbits
transportation

transform integrals
USE **integral transformations**

transformation tensors
USE **tensors**

∞ **transformations**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Fujita method
functions (mathematics)
order–disorder transformations
phase transformations
transformations (mathematics)

transformations (mathematics)
UF *transforms*
GS **transformations (mathematics)**
. coordinate transformations
. discrete cosine transform
. Householder transformations
. integral transformations
. . Fourier transformation
. . . fast Fourier transformations
. . Fourier–Bessel transformations
. . Hilbert transformation
. . Laplace transformation
. linear transformations
RT Fujita method
functions (mathematics)
gauge invariance
Racah coefficient
∞ transformations
wavelet analysis

transformers
GS **transformers**
. instrument transformers
. mode transformers
. voltage converters (AC to AC)
RT amplifiers
ballasts (impedances)
circuit protection
∞ converters
coupling circuits
diplexers
electric coils
electric filters
electric motors
electric reactors
electrical grounding
inductance
magnet coils
magnetic circuits
magnetic cores

oscillators
phase control
plasma control
power supply circuits
resolvers
saturable reactors
solid state devices
toroids
up-converters
voltage regulators

transforms
USE transformations (mathematics)

transfusion
RT blood
first aid
medical science
syringes
veins

transgranular corrosion
DEF A slow mode of failure that requires the combined action of stress and aggressive environment where the path of failure runs through the grains producing branched cracking.
GS chemical attack
. transgranular corrosion
corrosion
. transgranular corrosion
RT corrosion tests
grain boundaries
intergranular corrosion
metal fatigue
protective coatings
stress corrosion

transhorizon radio propagation
GS transmission
. electromagnetic wave transmission
. . radio transmission
. . . transhorizon radio propagation
. signal transmission
. . radio transmission
. . . transhorizon radio propagation
RT radio attenuation
radio signals

transient heating
GS heating
. transient heating
. . pulse heating
. . shock heating
RT aerodynamic heating

transient loads
SN (LIMITED TO FORCE LOADS)
GS loads (forces)
. dynamic loads
. . transient loads
. . . gust loads
. . . impact loads
. . . landing loads
. . . shock loads
. . . . blast loads
RT aerodynamic loads
contact loads
cyclic loads
random loads
structural design criteria

transient oscillations
GS oscillations
. transient oscillations
RT damping
electron oscillations
lasers
masers
pilot induced oscillation
stimulated emission devices
transverse oscillation

transient pressures
GS pressure
. transient pressures
RT mass flow rate
pressure sensors

Transient Reactor Test Facility
UF *TREAT (test facility)*
GS test facilities
. Transient Reactor Test Facility
RT nuclear research and test reactors
reactor safety
SNAP

transient response
GS dynamic characteristics
. transient response
responses
. dynamic response
. . transient response
RT amplification
∞ compensation
damping
dynamic stability
impedance
pressure sensors
resonant frequencies
response bias
sensitivity
stroking tests
time constant
transfer functions

transients (surges)
USE surges

transistor amplifiers
GS amplifiers
. transistor amplifiers
electronic equipment
. solid state devices
. . semiconductor devices
. . . transistors
RT current amplifiers
differential amplifiers
feedback amplifiers
intermediate frequency amplifiers
operational amplifiers
power amplifiers
preamplifiers
transistors

transistor circuits
GS circuits
. transistor circuits
RT DTL integrated circuits
∞ electronics
hybrid circuits
integrated circuits
linear integrated circuits
logic circuits
microelectronics
printed circuits
TTL integrated circuits

transistor logic
RT Boolean algebra
∞ logic
logic circuits
logic design
threshold logic

transistor-transistor-logic integ circuits
USE TTL integrated circuits

transistors
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . transistors
. . . . bipolar transistors
. . . . field effect transistors
. . . . . charge flow devices
. . . . . JFET
. . . . . MODFETS
. . . . high electron mobility transistors
. . . . . MODFETS
. . . . junction transistors
. . . . . JFET
. . . . phototransistors
. . . . silicon transistors
. . . . . SOS (semiconductors)
RT germanium diodes
ion implantation
miniaturization
pentodes
resonant tunneling
SIS (semiconductors)
tetrodes
transistor amplifiers
TRAPATT devices
triodes

∞ **transit**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT occultation
Transit satellites
transits

Transit Attitude Control satellite
UF *TRAAC satellite*
GS artificial satellites
. navigation satellites
. . Transit Attitude Control satellite
RT ∞ control
satellite attitude control

Transit navigation system
GS satellite navigation systems
. Transit navigation system
RT NASA programs
navigation satellites
Nova satellites
Transit satellites

Transit satellites
GS artificial satellites
. navigation satellites
. . Transit satellites
RT Discos (satellite attitude control)
∞ transit
Transit navigation system

transit time
SN (NOT LIMITED TO ASTRONOMICAL TIMES OF TRANSIT)
GS time
. transit time
RT Barritt diodes
CATT devices
flight time
∞ motion

∞ **transition**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT boundary layer transition
ductile-brittle transition
electron transitions
forbidden transitions
phase transformations

transition flight
(added January 1990)
RT aircraft maneuvers
∞ flight
horizontal flight
hovering
V/STOL aircraft
vertical flight

transition flow
GS fluid flow
. gas flow
. . molecular flow
. . . transition flow
RT boundary layer thickness
boundary layer transition
free molecular flow
period doubling
rarefied gas dynamics
slip flow

∞ **transition layers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT boundary layer transition
interlayers
laminar flow
plasma layers
shear layers
shock layers
shock waves
surface layers
turbulent flow

transition metals
GS metals
. transition metals
. . cadmium
. . . cadmium isotopes
. . chromium
. . . chromium isotopes
. . cobalt
. . . cobalt isotopes
. . . . cobalt 58
. . . . cobalt 60
. . copper
. . . copper isotopes
. . gold
. . . gold isotopes
. . . . gold 198
. . hafnium
. . . hafnium isotopes
. . iridium
. . . iridium isotopes
. . iron
. . . iron isotopes
. . . . iron 57
. . . . iron 58
. . . . iron 59
. . manganese
. . . manganese isotopes
. . mercury (metal)
. . . mercury isotopes
. . . mercury vapor
. . molybdenum
. . nickel
. . . nickel isotopes
. . niobium
. . . niobium isotopes
. . . . niobium 95
. . osmium
. . . osmium isotopes
. . palladium
. . platinum
. . . platinum isotopes
. . rhenium
. . . rhenium isotopes
. . rhodium
. . . rhodium isotopes
. . ruthenium
. . . ruthenium isotopes
. . scandium
. . . scandium isotopes
. . silver
. . . silver isotopes
. . tantalum
. . . tantalum isotopes
. . technetium
. . technetium isotopes
. . titanium
. . . titanium isotopes
. . tungsten
. . tungsten isotopes
. . vanadium
. . . vanadium isotopes
. . yttrium
. . . yttrium isotopes
. . zinc
. . . zinc isotopes
. . zirconium
. . . zirconium isotopes
. . . . zirconium 95
RT actinide series
complex compounds
metal nitrides
palladium compounds
rare earth elements
refractory metals
ruthenium compounds
shape memory alloys
transuranium elements

transition points
DEF In aerodynamics, the points of change from laminar to turbulent flow.
RT boundary layer transition
∞ equilibrium
Knudsen flow
phase diagrams
Reynolds number

transition pressure
DEF The pressure at which phase transition occurs.
GS pressure
. transition pressure
RT high pressure
hydrostatic pressure
phase transformations
pressure effects

transition probabilities
RT electron transitions
excitation
Fermi surfaces
nuclear capture
probability theory
spectra

transition temperature
DEF An arbitrarily defined temperature within the temperature range in which metal fracture characteristics determined usually by notched tests are changing rapidly such as from primarily fibrous (shear) to primarily crystalline (cleavage) fracture. The arbitrarily defined temperature in a range in which the ductility of a material changes rapidly with temperature.
GS temperature
. transition temperature
RT ductile–brittle transition
glass transition temperature
heat of fusion
Kondo effect
liquid phases
melting points
phase diagrams
phase transformations
solidification
superconducting power transmission
superconductivity

transits
SN (EXCLUDES PARTIAL OR TOTAL OCCULTATION OF ONE BODY BY ANOTHER)
GS measuring instruments
. optical measuring instruments
. . . transits
. . . theodolites
. . . . cinetheodolites
optical equipment
. optical measuring instruments
. . transits
. . . theodolites
. . . . cinetheodolites
RT compasses
sextants
∞ transit

translating
GS translating
. machine translation
RT decoding
documentation
∞ interpretation
languages
technical writing
. . translators

translational motion
GS translational motion
. three dimensional motion
. . three dimensional flow
. . . Karman–Bodewadt flow
. . . secondary flow
RT ∞ motion
racks (gears)
rigid structures

∞ **translators**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT computer programs
decoders
digital to voice translators
language programming
repeaters
translating

translucence
GS electromagnetic properties
. optical properties
. . translucence
RT light transmission
opacity
optical density
transmissivity
transparence

translunar injection
GS injection
. translunar injection
RT injection guidance
midcourse guidance
orbital mechanics
transfer orbits

translunar space
USE Interplanetary space

transmission
DEF Process by which radiant energy proceeds through any material or object. Used for coastal transmission.
UF *coastal transmission*
GS **transmission**
. demultiplexing
. electric power transmission
. electromagnetic wave transmission
. . light transmission
. . . light scattering
. . . . halos
. . microwave attenuation
. . radar transmission
. . radio transmission
. . . double sideband transmission
. . . ionospheric propagation
. . . . ionospheric F-scatter propagation
. . . microwave transmission
. . . multipath transmission
. . . short wave radio transmission
. . . single sideband transmission
. . . spread spectrum transmission
. . . transequatorial propagation
. . . transhorizon radio propagation
. . scatter propagation
. . . ionospheric F-scatter propagation
. . television transmission
. heat transmission
. . heat transfer
. . . aerodynamic heat transfer
. . . . hypersonic heat transfer
. . . . supersonic heat transfer
. . . conductive heat transfer
. . . convective heat transfer
. . . laminar heat transfer
. . . radiative heat transfer
. . . turbulent heat transfer
. multiplexing
. . code division multiplexing
. . frequency division multiplexing
. . time division multiplexing
. . wavelength division multiplexing
. self propagation
. signal transmission
. . data transmission
. . . automatic picture transmission
. . . multiple access
. . . . Aloha system
. . . . code division multiple access
. . . . demand assignment multiple access
. . . . frequency division multiple access
. . . . time division multiple access
. . . packet transmission
. . . . Aloha system
. . . single channel per carrier transmission
. . microwave attenuation
. . radar transmission
. . radio transmission
. . . double sideband transmission
. . . ionospheric propagation
. . . . ionospheric F-scatter propagation
. . . microwave transmission
. . . multipath transmission
. . . short wave radio transmission
. . . single sideband transmission
. . . spread spectrum transmission
. . . transequatorial propagation
. . . transhorizon radio propagation
. . satellite transmission
. . telemetry
. . . biotelemetry
. . . P.A.C.M. telemetry
. . . PCM telemetry
. . . radio telemetry
. . . . pulse frequency modulation telemetry
. . television transmission
. sound transmission
. stress propagation
. telephony
. wave propagation
. . acoustic propagation
. . . sound propagation
. . diffraction propagation
. . ground wave propagation
. . ionospheric propagation
. . . ionospheric F-scatter propagation
. . light scattering
. . . halos
. . scatter propagation
. . . ionospheric F-scatter propagation
. . shock wave propagation
. . transequatorial propagation
RT absorptance
atmospheric attenuation
attenuation
broadcasting
∞ conduction
diffraction
electromagnetic absorption
electromagnetic radiation
optical filters
output
∞ propagation
radar attenuation
radio attenuation
reflection
refraction
signal reflection
telecommunication
transmissivity
transmittance
wave dispersion

transmission circuits
GS circuits
. transmission circuits
RT circuit protection
electric power transmission
signal stabilization
strip transmission lines
telecommunication

transmission efficiency
GS efficiency
. transmission efficiency
RT Aloha system
attenuation coefficients
bit error rate
carrier to noise ratios
data transmission
downlinking
electromagnetic wave transmission
frequency hopping
intersymbolic interference
network control
opacity
packet transmission
packets (communication)
power efficiency
signal transmission
transmission rate (communications)
transmittance
uplinking

transmission electron microscopy
(added December 1982)
DEF A type of electron microscopy in which the specimen transmits an electron beam focused on it. Image contrasts are formed by the scattering of electrons out of the beam. Various magnetic lenses perform functions analogous to those of ordinary lenses in light microscopy.
UF *TEM (microscopy)*
GS microscopy
. electron microscopy
. . transmission electron microscopy
RT electron beams
electron scattering
field emission
ion microscopes
magnetic lenses
microanalysis
phase contrast
scanning tunneling microscopy

transmission fluids
RT fluid transmission lines
∞ fluids
hydraulic fluids
working fluids

transmission lines
DEF The conductive connectors between system elements which carry signal power. (2) lines used for electric power transmission.
UF *trunks (lines)*
GS transmission lines
. communication cables
. . coaxial cables
. fluid transmission lines
. power lines
. strip transmission lines
. . microstrip transmission lines
. submarine cables
. underground transmission lines
RT acoustic delay lines
antenna couplers
antenna feeds
backward waves
∞ cables
circuit protection
circuits
delta antennas
directional couplers
distributed amplifiers
electric conductors
electric current
electric power transmission
electric wire
electrical engineering
electrification
harnesses
impedance matching
insulators
∞ lines
mode transformers
nonresonance
optical fibers
Smith chart
standing wave ratios
superconducting power transmission
telecommunication
waveguides
wiring

transmission loss
DEF The reduction in the magnitude of some characteristic of a signal between two stated points in a transmission system.
RT attenuation
current regulators
electric power transmission
insertion
insertion loss
losses

lossy media
silence
transmission rate (communications)
voltage regulators
wave dispersion

transmission rate (communications)
(added July 1993)
UF *transmission speed (communications)*
GS rates (per time)
. transmission rate (communications)
RT access time
bit error rate
channel capacity
data transmission
delay
interprocessor communication
satellite communication
signal reception
signal transmission
telecommunication
time lag
transmission efficiency
transmission loss

transmission speed (communications)
USE transmission rate (communications)

transmissions (machine elements)
DEF The gearing system by which power is transmitted from the engine to the live axle in an automobile. Also known as gearboxes.
UF *gearboxes*
GS mechanical drives
. transmissions (machine elements)
RT gears
shafts (machine elements)
torque converters
torque motors
vehicle wheels

transmissivity
DEF Concerning radiation incident upon the boundary between two media, transmissivity is the ratio of the radiation transmitted through the boundary to the component of radiation normal to the boundary.
GS electromagnetic properties
. optical properties
. . transmissivity
RT absorptance
absorptivity
density (mass/volume)
light scattering
opacity
∞ physical properties
translucence
transmission
transmittance
transparence
transponders
visibility

transmissometers
GS measuring instruments
. optical measuring instruments
. . transmissometers
optical equipment
. optical measuring instruments
. . transmissometers
RT densitometers
photometers
radiance
telephotometry
transmittance

transmittance
DEF The ratio of the radiant flux transmitted by a medium or a body to the incident flux.
GS electromagnetic properties
. optical properties
. . transmittance
RT absorptance
attenuation coefficients
density (mass/volume)
electromagnetic absorption
infrared absorption
light (visible radiation)
optical density
photometry
ray tracing
reflectance
scattering
transmission
transmission efficiency
transmissivity
transmissometers
transparence

transmitter receivers
DEF Combinations of transmitters and receivers in singe housings, with some components being used by both units. Used for transceivers.
UF *transceivers*
GS communication equipment
. radio receivers
. . transmitter receivers
radio equipment
. radio receivers
. . transmitter receivers
. radio transmitters
. . transmitter receivers
receivers
. radio receivers
. . transmitter receivers
transmitters
. radio transmitters
. . transmitter receivers
RT interrogation
transponders

transmitters
DEF Devices used for the generation of signals of any type and form which are to be transmitted. Used for senders.
UF *senders*
GS transmitters
. emergency locator transmitters
. instrument transmitters
. radar transmitters
. radio transmitters
. . radio beacons
. . . omnidirectional radio ranges
. . . . self calibrating omnirange
. . radiometeorographs
. . radiosondes
. . . ionosondes
. . . rawinsondes
. . radiotelephones
. . sonobuoys
. . transmitter receivers
. repeaters
RT antennas
attenuation
duplexers
∞ instruments
microphones
receivers
signal encoding
telecommunication
television transmission
transponders

transmutation
GS nuclear reactions
. nuclear transformations
. . transmutation
RT neutron irradiation
radiogenic materials

transoceanic communication
GS telecommunication
. transoceanic communication
transoceanic systems
. transoceanic communication
RT facsimile communication
radio communication
Relay satellites

transoceanic flight
DEF Flight across an ocean.
RT∞ flight

transoceanic systems
GS transoceanic systems
. transoceanic communication
RT intercontinental ballistic missiles
ocean data acquisitions systems
∞ systems
telecommunication
transportation
world data centers

transonic aircraft
USE supersonic aircraft

Transonic Aircraft Technology Program
USE TACT program

transonic compressors
GS compressors
. transonic compressors
RT supersonic compressors
turbocompressors

transonic flight
RT∞ flight
rocket flight
sonic booms
supersonic flight

transonic flow
DEF In aerodynamics, flow of a fluid over a body in the range just above and just below the acoustic velocity. Used for sonic flow and transonics.
UF *sonic flow*
transonics
GS fluid flow
. compressible flow
. . transonic flow
RT aerodynamics
compressibility effects
∞ flow
flow velocity
gas flow
nozzle flow
shock waves
sonic nozzles
subsonic flow
supersonic flow
trisonic wind tunnels
wind tunnels

transonic flutter
GS vibration
. structural vibration
. . flutter
. . . transonic flutter
. . self induced vibration
. . . transonic flutter
RT missile vibration

subsonic flutter
supersonic flutter

transonic inlets
USE supersonic inlets

transonic nozzles
RT conical nozzles
convergent-divergent nozzles
hypersonic nozzles
∞ nozzles
sonic nozzles
supersonic nozzles
wind tunnel nozzles

transonic speed
SN (APPROXIMATELY MACH 0.8 TO 1.2)
DEF The speed of a body relative to the surrounding fluid at which the flow is in some places on the body subsonic and in other places supersonic.
GS rates (per time)
. transonic speed
velocity
. transonic speed
RT acoustic velocity
subsonic speed
supersonic speed

transonic turbines
USE supersonic turbines

transonic wind tunnels
GS test facilities
. wind tunnels
. . transonic wind tunnels
RT blowdown wind tunnels
hypersonic wind tunnels
slotted wind tunnels
subsonic wind tunnels
supersonic wind tunnels
wing flow method tests

transonics
USE transonic flow

transparence
UF *transparent materials*
GS electromagnetic properties
. optical properties
. . transparence
RT absorptance
absorptivity
atmospheric optics
clarity
density (mass/volume)
electromagnetic absorption
haze
light transmission
opacity
optical density
radome materials
translucence
transmissivity
transmittance
turbidity

transparent materials
USE transparence

transpiration
DEF The passage of gas or liquid through a porous solid (usually under conditions of molecular flow). Used for fluid transpiration.
UF *fluid transpiration*
GS phase transformations
. vaporizing
. . evaporation
. . . transpiration
RT cooling
cooling systems
evanescence
evapotranspiration
evolution (liberation)
gas evolution
mass transfer
molecular flow
outgassing
permeating
perspiration
temperature control

transpiration cooling
USE sweat cooling

transplantation
RT clinical medicine
heart implantation
surgery

transponder control group
UF *TCG (tracking)*
RT ∞ control
radar tracking
satellite tracking
spacecraft tracking
telemetry
transponders

transponders
DEF Combined receiver and transmitter whose function is to transmit signals automatically when triggered by an interrogator. Used for responders.
UF *responders*
GS radio equipment
. transponders
RT air traffic control
Beacon Collision Avoidance System
interrogation
radar beacons
radar equipment
radio receivers
radio transmitters
transmissivity
transmitter receivers
transmitters
transponder control group

transport aircraft
GS transport aircraft
. Aladin 2 aircraft
. AN-2 aircraft
. AN-22 aircraft
. AN-24 aircraft
. Argosy MK-1 aircraft
. BAC 111 aircraft
. Boeing 707 aircraft
. Boeing 720 aircraft
. Boeing 727 aircraft
. Boeing 733 aircraft
. Boeing 737 aircraft
. Boeing 747 aircraft
. Boeing 757 aircraft
. Boeing 767 aircraft
. Boeing 777 aircraft
. Boeing 2707 aircraft
. cargo aircraft
. . Breguet 941 aircraft
. . C-1A aircraft
. . C-2 aircraft
. . C-5 aircraft
. . C-9 aircraft
. . C-15 aircraft
. . C-17 aircraft
. . C-33 aircraft
. . C-35 aircraft
. . C-46 aircraft
. . C-47 aircraft
. . C-54 aircraft
. . C-118 aircraft
. . C-119 aircraft
. . C-121 aircraft
. . C-123 aircraft
. . C-124 aircraft
. . C-130 aircraft
. . C-131 aircraft
. . C-133 aircraft
. . C-135 aircraft
. . C-140 aircraft
. . C-141 aircraft
. . C-160 aircraft
. . CH-21 helicopter
. . CL-44 aircraft
. . DC 3 aircraft
. . DC 7 aircraft
. . P-180 aircraft
. . P-186 aircraft
. . spanloader aircraft
. . YC-14 aircraft
. CH-3 helicopter
. CH-34 helicopter
. CH-46 helicopter
. CH-47 helicopter
. CH-54 helicopter
. CL-84 aircraft
. CL-823 aircraft
. Concorde aircraft
. CV-880 aircraft
. DC 8 aircraft
. DC 9 aircraft
. DC 10 aircraft
. DH 121 aircraft
. DH 125 aircraft
. DHC 2 aircraft
. DHC 4 aircraft
. DHC 5 aircraft
. DO-31 aircraft
. DO-328 aircraft
. Electra aircraft
. European Airbus
. . A-300 aircraft
. . A-310 aircraft
. . A-320 aircraft
. . A-330 aircraft
. . A-340 aircraft
. F-27 aircraft
. F-28 transport aircraft
. G-1 aircraft
. G-222 aircraft
. H-19 helicopter
. H-53 helicopter
. H-56 helicopter
. HC-3 helicopter
. HFB-320 aircraft
. IL-14 aircraft
. IL-76 aircraft
. IL-86 aircraft
. IL-96 aircraft
. L-1011 aircraft
. L-2000 aircraft
. light intratheater transport
. light transport aircraft
. Lockheed model 18 aircraft
. MD 11 aircraft
. MD 80 aircraft
. MH-262 aircraft
. Mystere 20 aircraft
. Mystere 50 aircraft
. S-58 helicopter
. S-61 helicopter
. SA-330 helicopter

. SC–5 aircraft
. SC–7 aircraft
. SH–3 helicopter
. SH–4 helicopter
. short haul aircraft
. . C–8A augmentor wing aircraft
. . Cessna 402B aircraft
. . Mercure aircraft
. tanker aircraft
. TU–124 aircraft
. TU–144 aircraft
. TU–154 aircraft
. TU–204 aircraft
. UH–34 helicopter
. UH–60A helicopter
. UH–61A helicopter
. VC–10 aircraft
. Viscount aircraft
. XC–142 aircraft
. YS–11 aircraft
RT air transportation
∞ aircraft
commercial aircraft
general aviation aircraft
jet aircraft
light aircraft
∞ low wing aircraft
∞ military aircraft
passenger aircraft
rotary wing aircraft
∞ subsonic aircraft
supersonic aircraft
∞ transport vehicles
turbofan aircraft
turboprop aircraft
utility aircraft
V/STOL aircraft
water takeoff and landing aircraft

transport coefficients
USE **transport properties**

transport properties
UF *transport coefficients*
GS **transport properties**
. atmospheric conductivity
. . ionospheric conductivity
. carrier mobility
. . electron mobility
. . hole mobility
. diffusion coefficient
. . Soret coefficient
. electrical resistivity
. . ionospheric conductivity
. . magnetoresistivity
. . photoconductivity
. . plasma conductivity
. . superconductivity
. . . Kondo effect
. gaseous diffusion
. . gaseous self–diffusion
. ionic mobility
. thermal conductivity
. thermal diffusivity
. viscosity
. . eddy viscosity
. . gas viscosity
RT binary fluids
Boltzmann transport equation
∞ conductivity
diffusion
flow coefficients
Hall effect
heat transfer
high temperature tests
kinetic theory
Lighthill gas model
mobility
∞ physical properties
pollution transport
∞ properties
radiation transport
Seebeck effect
∞ solid state physics
thermoelectricity

transport theory
GS kinetic theory
. **transport theory**
. . Chapman–Enskog theory
. . Eyring theory
. . mixing length flow theory
RT Boltzmann transport equation
diffusion theory
gas transport
integral equations
molecular interactions
Monte Carlo method
pollution transport
reaction–diffusion equations
∞ theories

∞ **transport vehicles**
SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT crawler tractors
ground effect machines
rapid transit systems
ships
transport aircraft
∞ vehicles

transportation
GS **transportation**
. air transportation
. marine transportation
. rail transportation
. rapid transit systems
. space transportation
. . space transportation system
. . . Advanced Launch System (STS)
. . . Saenger space transportation system
. urban transportation
RT artificial harbors
automated guideway transit vehicles
automated transit vehicles
cargo
contractors
conveyors
deepwater terminals
delivery
distributing
∞ distribution
electric automobiles
evacuating (transportation)
freight costs
freighters
handling equipment
hauling
highways
logistics
materials handling
missiles
motor vehicles
offshore docking
offshore platforms
packaging
passengers
pipelines
riding quality
roads
routes
services
site selection
tanker terminals
terminal facilities
tractors
traffic
transcontinental systems
transferring
transoceanic systems
transportation networks
∞ travel
trucks

transportation energy
RT allocations
cargo
commercial energy
distributing
domestic energy
economic factors
∞ energy
energy conversion
engines
fuels
hauling
industrial energy
ships
∞ tankers
trucks

transportation networks
DEF Networks of highways, railways, subways, etc., for the movement of passenger and cargo.
RT highways
intersections
rapid transit systems
roads
transportation

transporter
GS surface vehicles
. **transporter**
RT ∞ containers
∞ vehicles

transputers
(added August 1989)
GS data processing equipment
. computers
. . **transputers**
RT architecture (computers)
distributed processing
interprocessor communication
microprocessors
parallel processing (computers)

transuranium elements
DEF Elements above uranium in the periodic table, that is, with an atomic number greater than 92.
GS chemical elements
. actinide series
. . **transuranium elements**
. . . americium
. . . . americium isotopes
. . . . . americium 241
. . . berkelium
. . . californium
. . . . californium isotopes
. . . curium
. . . . curium isotopes
. . . . . curium 242
. . . . . curium 244
. . . einsteinium
. . . fermium
. . . lawrencium
. . . mendelevium
. . . neptunium

. . . . neptunium isotopes
. . . nobelium
. . . plutonium
. . . . plutonium isotopes
. . . . . plutonium 238
. . . . . plutonium 239
. . . . . plutonium 240
. . . . . plutonium 241
. . . . . plutonium 244
. . . sergenium
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . . americium
. . . . . americium isotopes
. . . . . americium 241
. . . . . berkelium
. . . . . californium
. . . . . californium isotopes
. . . . . curium
. . . . . curium isotopes
. . . . . curium 242
. . . . . curium 244
. . . . . einsteinium
. . . . . fermium
. . . . . lawrencium
. . . . . mendelevium
. . . . . neptunium
. . . . . neptunium isotopes
. . . . . nobelium
. . . . . plutonium
. . . . . plutonium isotopes
. . . . . plutonium 238
. . . . . plutonium 239
. . . . . plutonium 240
. . . . . plutonium 241
. . . . . plutonium 244
. . . . . sergenium
metals
. actinide series
. . transuranium elements
. . . americium
. . . . americium isotopes
. . . . . americium 241
. . . berkelium
. . . californium
. . . . californium isotopes
. . . curium
. . . . curium isotopes
. . . . . curium 242
. . . . . curium 244
. . . einsteinium
. . . fermium
. . . lawrencium
. . . mendelevium
. . . neptunium
. . . . neptunium isotopes
. . . nobelium
. . . plutonium
. . . . plutonium isotopes
. . . . . plutonium 238
. . . . . plutonium 239
. . . . . plutonium 240
. . . . . plutonium 241
. . . . . plutonium 244
. . . sergenium
RT transition metals

transverse acceleration
GS rates (per time)
. acceleration (physics)
. . transverse acceleration
RT ∞ acceleration
acceleration measurement
acceleration stresses (physiology)
angular acceleration

transverse loads
(added June 1992)
GS loads (forces)
. transverse loads
RT dynamic loads
force distribution
load distribution (forces)
loading moments
shear stress
static loads
stress distribution
stresses

transverse oscillation
DEF Oscillation in which the direction of motion of the particles is perpendicular to the direction of advance of the oscillatory motion in contrast with longitudinal oscillation, in which the direction of motion in the same as that of advance. Used for transverse vibration.
UF *transverse vibration*
GS oscillations
. transverse oscillation
. . H waves
RT gamma rays
harmonic oscillation
lateral oscillation
stable oscillations
transient oscillations

transverse vibration
USE **transverse oscillation**

transverse waves
DEF Waves in which the direction of displacement at each point of the medium is parallel to the wave front.
GS transverse waves
. H waves
RT elastic waves
electromagnetic radiation
gamma rays
longitudinal waves
magnetohydrodynamic flow
plane waves
radio waves
S waves
SH waves
vibration mode
wave packets
∞ waves

transversely excited atmospheric lasers
USE **TEA lasers**

TRAP program
GS programs
. TRAP program
RT plasma control
∞ radiation

TRAPATT devices
UF *trapped plasma avalanche triggered transit*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . TRAPATT devices
RT avalanche diodes
∞ devices
diodes
transistors

TRAPATT diodes
USE **avalanche diodes**

trapezoidal tail surfaces
GS assemblies
. tail assemblies
. . trapezoidal tail surfaces
planforms
. trapezoidal tail surfaces
tail surfaces
. trapezoidal tail surfaces
RT control surfaces
horizontal tail surfaces
hypersonic aircraft
rudders
stabilizers (fluid dynamics)
supersonic aircraft
∞ surfaces
sweptback tail surfaces

trapezoidal wings
GS airfoils
. wings
. . low aspect ratio wings
. . . trapezoidal wings
. . swept wings
. . . swept forward wings
. . . . trapezoidal wings
. . . sweptback wings
. . . . trapezoidal wings
planforms
. wing planforms
. . swept forward wings
. . . trapezoidal wings
. . sweptback wings
. . . trapezoidal wings

trapezoids
GS geometry
. Euclidean geometry
. . polygons
. . . tetragons
. . . . trapezoids

trapped magnetic fields
GS magnetic fields
. trapped magnetic fields
RT flux pinning
magnetically trapped particles
plasma control
superconductivity
trapping

trapped particles
GS particles
. trapped particles
. . magnetically trapped particles
. . . radiation belts
. . . . artificial radiation belts
. . . . inner radiation belt
. . . . outer radiation belt
. . . . proton belts
RT charged particles
electron precipitation
laser cooling
proton precipitation
trapping

trapped plasma avalanche triggered transit
USE **TRAPATT devices**

trapped vortices
(added August 1989)
DEF Air flow in rotary motion but trapped relative to leading edge vortex separation, which increases not only lift but also drag. The trapped vortices result in thrust and reduced drag. Used for vortex traps.
UF *vortex traps*
GS vortices

. trapped vortices
RT counterflow
flow distribution
mixing
rotating fluids
rotating liquids
turbulent mixing
turbulent wakes
vortex rings
vorticity

trapping
GS trapping
. cryotrapping
RT conduction bands
crystal defects
flux pinning
ion storage
phosphorescence
radiation belts
trapped magnetic fields
trapped particles

traps
GS traps
. cold traps
. ion traps (instrumentation)
. vapor traps
RT concentrators
entrapment
separators
valves

∞ travel
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT distance
harbors
logistics
range (extremes)
transportation

traveling charge
GS electric charge
. traveling charge
RT electrodynamics
energy dissipation
field theory (physics)

traveling ionospheric disturbances
DEF Atmospheric gravity waves originating at the auroral oval or at the terminator with speeds of 1000 km/hour over the Earths surface. Due to interaction between the neutral atmosphere and the ionosphere, they result in temporary enhancements and depletions of the ionosphere that travel with the gravity waves.
UF *TID*
GS ionospheric disturbances
. traveling ionospheric disturbances
RT gravity waves
ionospheric currents
ionospheric propagation
ionospheric storms
ionospheric tilts
magnetic variations
sudden ionospheric disturbances

traveling salesman problem
RT operations research
probability theory
∞ problems
statistical analysis

traveling solvent method
SN (LIMITED TO CRYSTAL GROWTH TECHNIQUES)
GS growth
. crystal growth
. . traveling solvent method
RT additives
carrier injection
electroepitaxy
∞ methodology

traveling wave amplifiers
GS amplifiers
. traveling wave amplifiers
RT amplifier design
power amplifiers
traveling wave tubes

traveling wave masers
GS stimulated emission devices
. masers
. . traveling wave masers
RT amplifiers
cavity resonators
coherent electromagnetic radiation

traveling wave modulation
GS modulation
. traveling wave modulation
RT lasers
light modulation
wave diffraction

traveling wave tubes
DEF Electron tubes in which streams of electrons interact continuously or repeatedly with guided electromagnetic waves moving substantially in synchronism with them, and in such a way that there is a net transfer of energy from the streams to the waves. Used for crestatrons and helix tubes.
UF *crestatrons*
helix tubes
GS electron tubes
. vacuum tubes
. . microwave tubes
. . . traveling wave tubes
. . . . backward wave tubes
. . . . . helitrons
. . . . carcinotrons
microwave equipment
. microwave tubes
. . traveling wave tubes
. . . backward wave tubes
. . . . helitrons
. . . carcinotrons
RT backward waves
Brillouin flow
crossed field amplifiers
cyclotron resonance devices
electron bunching
magnetostatic amplifiers
magnetrons
microwave oscillators
oscillations
scalloping
traveling wave amplifiers

traveling waves
GS traveling waves
. solitary waves
RT backward waves
elastic waves
electromagnetic radiation
nonresonance
phase velocity
plane waves
radio waves

trays
RT ∞ buckets
∞ containers
∞ plates

treadmills
RT physical exercise
physical fitness
physical work
physiological tests

treads
RT stairways
tires
vehicular tracks

TREAT (test facility)
USE Transient Reactor Test Facility

∞ treatment
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *conditioning (treating)*
RT air conditioning
clinical medicine
heat treatment
prewhitening
sewage treatment
surface treatment
thermomechanical treatment
waste treatment
water treatment

tree ring dating
USE dendrochronology

∞ trees
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT conifers
trees (mathematics)
trees (plants)

trees (mathematics)
GS trees (mathematics)
. fault trees
RT analysis (mathematics)
circuits
graph theory
graphs (charts)
∞ nets
Petri nets
sneak circuit analysis
topology
∞ trees

trees (plants)
DEF Woody plants having one well defined stem and a more or less definitely formed crown, usually attaining a height of at least 8 feet.
GS plants (botany)
. trees (plants)
. . citrus trees
. . conifers
. . deciduous trees
RT bales
canopies (vegetation)
chaparral
clearings (openings)
defoliants
defoliation
dendrochronology
forests
geobotany
herbicides
logging (industry)
Masonite (trademark)
orchards

phreatophytes
plywood
silviculture
timber identification
timber inventory
timber vigor
timberline
∞ trees
vegetation
wood

trellis coding
(added August 1991)
DEF A 'sliding window' method of encoding a binary data stream into a sequence of real numbers that are input to a noisy transmission channel.
GS coding
. signal encoding
. . trellis coding
RT binary codes
channel noise
∞ codes
concatenated codes
convolution integrals
phase modulation
phase shift keying

tremors
RT earthquake resistance
earthquakes
paralysis
Parkinson disease
Rouse belts

trend analysis
(added May 1989)
DEF A management tool for evaluating variation in data with the ultimate objective of forecasting future events based upon an examination of past results.
RT ∞ analyzing
failure analysis
performance prediction
prediction analysis techniques
regularity
reliability analysis
statistical analysis
time series analysis
trends

trends
RT extrapolation
forecasting
growth
periodic variations
∞ projection
time series analysis
trend analysis

Tresca flow
GS fluid flow
. plastic flow
. . Tresca flow
RT ductility
stability
yield point

triacetin
GS acetates
. triacetin
esters
. triacetin
RT acetic acid
glycerols
plasticizers
solvents

triaminoguanidinenitrate
USE **TAGN**

triaminoguanidinium azide
GS amines
. diamines
. . guanidines
. . . triaminoguanidinium azide
nitrogen compounds
. azides (organic)
. . triaminoguanidinium azide

triaminotrinitrobenzene
USE **TATB**

triangles
GS geometry
. Euclidean geometry
. . polygons
. . . triangles
RT tetrahedrons
trigonometry

triangular wings
USE **delta wings**

triangulation
RT angles (geometry)
mapping
navigation
trigonometry
wildlife radiolocation

triatomic molecules
GS molecules
. polyatomic molecules
. . triatomic molecules
RT diatomic molecules

triaxial stresses
UF triaxiality
GS stresses
. triaxial stresses
RT mechanical properties
tensile stress

triaxiality
USE **triaxial stresses**

tribolls
GS animals
. invertebrates
. . arthropods
. . . insects
. . . . Coleoptera
. . . . . beetles
. . . . . tribolls

tribology
DEF Science of friction, wear, and lubrication.
RT abrasion
corrosion
erosion
erosive burning
fretting
friction
interfacial tension
lubrication
triboluminescence
vapor phase lubrication
wear

triboluminescence
DEF The emission of light caused by application of mechanical energy to a solid.
GS emission
. light emission
. . luminescence
. . . photoluminescence
. . . . triboluminescence
RT fluorescence
friction
mechanical properties
photoluminescent bands
stresses
tribology

tributaries
RT drainage patterns
Earth resources
estuaries
rivers

trichlorides
USE **chlorides**

trichloroethylene
(added September 1995)
GS ethylene compounds
. chloroethylene
. . trichloroethylene
halogen compounds
. chlorine compounds
. . trichloroethylene
RT cleaning
reduction (chemistry)
solvents

Trident aircraft
USE **DH 121 aircraft**

trident submarine
GS water vehicles
. ships
. . submarines
. . . trident submarine
. underwater vehicles
. . submarines
. . . trident submarine
RT navy
nuclear propulsion

trienes
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkenes
. . . . trienes

triethyl compounds
GS alkyl compounds
. triethyl compounds
RT ∞ chemical compounds
diethyl compounds
ethyl compounds

trifluoroamine oxide
GS amines
. fluoroamines
. . trifluoroamine oxide
halogen compounds
. fluorine compounds
. . fluoro compounds
. . . fluorine organic compounds
. . . . fluoroamines
. . . . . trifluoroamine oxide
organic compounds
. fluorine organic compounds
. . fluoroamines
. . . trifluoroamine oxide

trigatrons
GS switches
. trigatrons
RT ∞ gas tubes
pulse modulation
spark gaps
trigger circuits

trigger circuits
DEF Circuits that have two conditions of stability, with means for passing from one to the other when certain conditions are satisfied, either spontaneously or through application of an external stimulus.
GS circuits
. **trigger circuits**
RT bistable circuits
gates (circuits)
multivibrators
threshold gates
threshold logic
thyristors
trigatrons

triggers
USE **actuators**

trigonometric functions
GS analysis (mathematics)
. real variables
. . periodic functions
. . . **trigonometric functions**
. . . . cosine series
. . . . sine series
. . . . tangents
functions (mathematics)
. transcendental functions
. . periodic functions
. . . **trigonometric functions**
. . . . cosine series
. . . . sine series
. . . . tangents
RT Fresnel integrals
sine waves
trigonometry

trigonometry
GS geometry
. Euclidean geometry
. . analytic geometry
. . . **trigonometry**
RT angles (geometry)
∞ science
triangles
triangulation
trigonometric functions

trim (balance)
USE **aerodynamic balance**

trimers
GS oligomers
. **trimers**
prepolymers
. **trimers**
RT dimers
monomers

trimethadione
GS drugs
. **trimethadione**
ketones
. **trimethadione**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **trimethadione**

trimethyl compounds
GS alkyl compounds
. **trimethyl compounds**
RT ∞ chemical compounds
dimethyl compounds
methyl compounds

Trinidad and Tobago
GS landforms
. **islands**
. . West Indies
. . . **Trinidad and Tobago**
nations
. **Trinidad and Tobago**
RT Caribbean region
South America

trinitramine
GS amines
. **trinitramine**
nitrogen compounds
. **trinitramine**

trinitro compounds
GS nitrogen compounds
. nitro compounds
. . **trinitro compounds**
RT ∞ chemical compounds

trinitrotoluene
UF *TNT (trinitrotoluene)*
GS explosives
. **trinitrotoluene**
nitrogen compounds
. nitro compounds
. . nitrobenzenes
. . . **trinitrotoluene**
RT exposure

trinitrotriazocyclohexane
USE **RDX**

triodes
RT CATT devices
diodes
electron tubes
microwave tubes
semiconductor devices
tetrodes
thyristors
transistors

triols
GS hydroxyl compounds
. alcohols
. . **triols**
. . . cyanuric acid

triphenyl silicon
GS organic compounds
. organic silicon compounds
. . triphenyl **silicon**
silicon compounds
. organic silicon compounds
. . **triphenyl silicon**

triphenyls
GS organic compounds
. hydrocarbons
. . **triphenyls**
phenyls
. polyphenyls
. . **triphenyls**

triple axis spectrometers
USE **neutron spectrometers**

triple stars
(added October 1988)
GS celestial bodies
. **stars**
. . **triple stars**
RT binary stars
companion stars
stellar systems
three body problem

triplet excitation
USE **atomic energy levels**

triplet state
USE **atomic energy levels**

tripods
GS supports
. **tripods**
RT optical equipment

tripropellants
USE **liquid rocket propellants**

trisonic wind tunnels
DEF Wind tunnels designed for subsonic, transonic, and supersonic flows.
GS test facilities
. wind tunnels
. . **trisonic wind tunnels**
RT slotted wind tunnels
transonic flow
wind tunnel tests

tritium
UF *hydrogen 3*
GS chemical elements
. hydrogen
. . hydrogen isotopes
. . . **tritium**
. nuclides
. . isotopes
. . . hydrogen isotopes
. . . . **tritium**
. . . radioactive isotopes
. . . . **tritium**
gases
. hydrogen
. . hydrogen isotopes
. . . **tritium**
RT heavy water
nuclear fuels

Triton
DEF One of the two satellites of the planet Neptune, with a diameter of about 4800 kilometers, orbiting at a mean distance of 354,000 kilometers.
GS celestial bodies
. natural satellites
. . Neptune satellites
. . . **Triton**
RT Galilean satellites
Neptune (planet)
Neptune atmosphere
satellite atmospheres
Titan

tritons
GS ions
. **tritons**
particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **tritons**
. corpuscular radiation
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **tritons**
RT alpha particles
protons

trivalent ions
GS ions
. **trivalent ions**
RT free radicals
positive ions

valence

trochoids
USE pivots

trolilite
GS chalcogenides
. sulfides
. . pyrrhotite
. . . troilite
iron compounds
. pyrrhotite
. . troilite
minerals
. pyrrhotite
. . troilite
sulfur compounds
. sulfides
. . pyrrhotite
. . . troilite
RT iron meteorites
meteoritic composition

Trojan aircraft
USE T-38 aircraft

Trojan orbits
GS orbits
. spacecraft orbits
. . Trojan orbits
RT celestial mechanics
many body problem
three body problem

Trombe walls
DEF Structures with passive solar collectors in the walls.
GS walls
. Trombe walls
RT energy technology
heat storage
phase change materials
radiative heat transfer
solar energy absorbers
solar heating
solar houses
thermal insulation

tropical meteorology
GS meteorology
. tropical meteorology
RT agrometeorology
el Nino
equatorial atmosphere
GARP Atlantic Tropical Experiment
intertropical convergent zones
meteorological parameters

tropical regions
UF *jungles*
low latitudes
subtropical regions
tropics
GS regions
. tropical regions
. . Amazon region (South America)
. . intertropical convergent zones
RT climatology
equatorial atmosphere
equatorial regions
GARP Atlantic Tropical Experiment
geography
hot weather
latorites
Lomonosov current
meteorology
rain forests
temperate regions
Virgin Islands

tropical storms
GS storms
. storms (meteorology)
. . tropical storms
. . . hurricanes
. . . . Anna hurricane
. . . typhoons
RT atmospheric circulation
cyclones
meteorology
storm damage
tornadoes

tropics
USE tropical regions

tropism
GS tropism
. aeciotropism
. geotropism
. gravitropism
. gyrotropism
. neurotropism

tropopause
SN (ALTITUDE APPROXIMATELY 15 TO 20 KM)
DEF The boundary between the troposphere and the stratosphere, usually characterized by an abrupt change of lapse rate. The change is in the direction of increased atmospheric stability from regions below to regions above the tropopause. Its height varies from 15 to 20 kilometers in the tropics to about 10 kilometers in polar regions. In polar regions in winter it is often difficult or impossible to determine just where the tropopause lies, since under some conditions there is no abrupt change in lapse rate at any height.
GS Earth atmosphere
. lower atmosphere
. . troposphere
. . . tropopause
RT diurnal variations
isothermal layers
middle atmosphere

troposphere
SN (GROUND LEVEL TO APPROXIMATELY 15 KM)
DEF That portion of the atmosphere from the Earth's surface to the stratosphere; that is, the lowest 10 to 20 kilometers of the atmosphere. The troposphere is characterized by decreasing temperature with height, appreciable vertical wind motion, appreciable water vapor content, and weather. Dynamically, the troposphere can be divided into the following layers: surface boundary layer, Ekman layer, and free atmosphere.
GS Earth atmosphere
. lower atmosphere
. . troposphere
. . . tropopause
RT chemosphere
homosphere
Intasat satellite

tropospheric radiation
SN (EXCLUDES TERRESTRIAL RADIATION)
GS atmospheric radiation
. tropospheric radiation
electromagnetic radiation
. tropospheric radiation
RT radiation
sky radiation
stratosphere radiation
terrestrial radiation

tropospheric scattering
GS scattering
. wave scattering
. . atmospheric scattering
. . . tropospheric scattering
RT light scattering
wideband communication

tropospheric waves
SN (EXCLUDES RADIO WAVES)
DEF Radio waves that are propagated by reflection from a place of abrupt change in the dielectric constant or its gradient in the troposphere.
GS tropospheric waves
. planetary waves
RT elastic waves
lee waves
radio waves
surface waves
waves

tropyl compounds
GS bases (chemical)
. alkaloids
. . tropyl compounds
nitrogen compounds
. alkaloids
. . tropyl compounds
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . alkaloids
. . . . tropyl compounds
RT chemical compounds

troubleshooting
USE maintenance

troughs
RT canals
ditches
irrigation
low pressure

trucks
SN (EXCLUDES UNDERCARRIAGES)
UF *vans*
GS surface vehicles
. motor vehicles
. . trucks
. . . tank trucks
RT antiskid devices
automobiles
cargo
delivery
dollies
electric motor vehicles
ground handling
hauling
materials handling
military vehicles
recovery vehicles
tractors
trailers
transportation
transportation energy

truncation (mathematics)
USE approximation

truncation errors
DEF In computations, the errors resulting from the use of only a finite number of terms of an infinite series or from the approximation of operations in the infinitesimal calculus by operations in the calculus of finite differences.
GS analysis (mathematics)
. numerical analysis

. . truncation errors
errors
. truncation errors
RT ill-conditioned problems (mathematics)
precision

trunks (lines)
USE **transmission lines**

trunnions
USE **shafts (machine elements)**

trusses
GS **structural members**
. **trusses**
RT **arches**
beams (supports)
construction industry
frames
girders
I beams
loops
Maxwell-Mohr method
megamechanics
∞ **structures**
struts
supports
Timoshenko beams

trypanosome
GS **animals**
. protozoa
. . Flagellata
. . . trypanosome
microorganisms
. protozoa
. . Flagellata
. . . trypanosome
parasites
. trypanosome
RT parasitic diseases

trypsin
GS **biopolymers**
. proteins
. . enzymes
. . . trypsin
organic compounds
. proteins
. . enzymes
. . . trypsin
RT pancreas

tryptamines
GS **amines**
. tryptamines
. . serotonin

tryptophan
GS **acids**
. amino acids
. . tryptophan
. carboxylic acids
. . tryptophan
nitrogen compounds
. tryptophan
organic compounds
. amino acids
. . tryptophan
. carboxylic acids
. . tryptophan
. cyclic compounds
. . heterocyclic compounds
. . . azoles
. . . . pyrroles
. . . . . indoles
. . . . . tryptophan

TS-11 aircraft
UF *Iskra aircraft*
Polish TS-11 aircraft
GS **jet aircraft**
. **TS-11 aircraft**
monoplanes
. **TS-11 aircraft**
training aircraft
. **TS-11 aircraft**
RT ∞ **aircraft**

TSR-2 aircraft
UF *BAC TSR 2 aircraft*
GS **attack aircraft**
. **TSR-2 aircraft**
BAC aircraft
. **TSR-2 aircraft**
jet aircraft
. **TSR-2 aircraft**
monoplanes
. **TSR-2 aircraft**
reconnaissance aircraft
. **TSR-2 aircraft**
supersonic aircraft
. **TSR-2 aircraft**
RT ∞ **aircraft**

tsunami waves
DEF A series of waves of extremly long length and period typically caused by a sudden vertical displacement of a large area of the sea floor during an undersa earthquake.
RT **Earth movements**
earthquake damage
earthquakes
frontal waves
seismic waves
shock waves
surface waves
tidal waves
water waves

TTL integrated circuits
SN (TRANSISTOR-TRANSISTOR-LOGIC INTEGRATED CIRCUITS)
UF *transistor-transistor-logic integ circuits*
GS **circuits**
. **integrated circuits**
. . **TTL integrated circuits**
RT **electronic packaging**
large scale integration
microminiaturization
molecular electronics
transistor circuits

TU-104 aircraft
UF *Camel aircraft*
GS **commercial aircraft**
. **TU-104 aircraft**
jet aircraft
. **TU-104 aircraft**
monoplanes
. **TU-104 aircraft**
passenger aircraft
. **TU-104 aircraft**
Tupolev aircraft
. **TU-104 aircraft**
RT ∞ **aircraft**
TU-154 aircraft

TU-124 aircraft
UF *Coolpot aircraft*
GS **commercial aircraft**
. **TU-124 aircraft**
jet aircraft
. **TU-124 aircraft**
monoplanes
. **TU-124 aircraft**
passenger aircraft
. **TU-124 aircraft**
transport aircraft
. **TU-124 aircraft**
Tupolev aircraft
. **TU-124 aircraft**
RT ∞ **aircraft**
turbofan engines

TU-134 aircraft
GS **commercial aircraft**
. **TU-134 aircraft**
jet aircraft
. **turbofan aircraft**
. . **TU-134 aircraft**
monoplanes
. **TU-134 aircraft**
passenger aircraft
. **TU-134 aircraft**
Tupolev aircraft
. **TU-134 aircraft**
RT ∞ **aircraft**

TU-144 aircraft
GS **commercial aircraft**
. **supersonic commercial air transport**
. . **TU-144 aircraft**
jet aircraft
. **turbofan aircraft**
. . **TU-144 aircraft**
passenger aircraft
. **TU-144 aircraft**
supersonic aircraft
. **supersonic transports**
. . **supersonic commercial air transport**
. . . **TU-144 aircraft**
transport aircraft
. **TU-144 aircraft**
RT ∞ **aircraft**

TU-154 aircraft
GS **commercial aircraft**
. **TU-154 aircraft**
jet aircraft
. **TU-154 aircraft**
transport aircraft
. **TU-154 aircraft**
Tupolev aircraft
. **TU-154 aircraft**
RT ∞ **aircraft**
cargo aircraft
passenger aircraft
TU-104 aircraft

TU-204 aircraft
(added September 1994)
GS **commercial aircraft**
. **TU-204 aircraft**
jet aircraft
. **TU-204 aircraft**
passenger aircraft
. **TU-204 aircraft**
transport aircraft
. **TU-204 aircraft**
Tupolev aircraft
. **TU-204 aircraft**
RT ∞ **aircraft**

tube anodes
GS **electrodes**
. **anodes**
. . **tube anodes**
RT **cathodes**
electrode materials
electron guns

tube cathodes
GS **electrodes**

. cathodes
. . tube cathodes
. . . cold cathodes
. . . hot cathodes
. . . photocathodes
. . . thermionic cathodes
. . . tunnel cathodes
RT cold cathode tubes
electron guns
hollow cathodes

tube grids
GS electrodes
. tube grids
RT bias
electron guns
electron tubes
∞ grids
ionizers

tube heat exchangers
GS heat exchangers
. tube heat exchangers
RT regenerators

tube lasers
DEF Stimulated emission devices activated with shock tubes.
RT chemical lasers
gasdynamic lasers
laser outputs
pulsed lasers
shock tubes
waveguide lasers

tuberculosis
GS diseases
. infectious diseases
. . bacterial diseases
. . . tuberculosis
. respiratory diseases
. . tuberculosis

∞ **tubes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Bourdon tubes
bronchi
burettes
cannulae
capillary tubes
circular tubes
ducts
electron tubes
eustachian tubes
Hilsch tubes
hoses
linings
manifolds
microwave tubes
pipes (tubes)
pitot tubes
shock tubes
siphons
trachea
Venturi tubes

tubing
USE pipes (tubes)

tumbling motion
DEF An attitude situation in which the vehicle continues on its flight, but turns end over end about its center of mass.
RT attitude stability
coning motion
destabilization
mixers
∞ motion
rotating environments
satellite rotation
∞ separation
spacecraft motion
spacecraft stability

tumors
GS diseases
. tumors
. . neoplasms
. . . cancer
. . . . leukemias
RT cysts
occupational diseases

tunable filters
(added June 1995)
DEF Filters consisting generally of combinations of capacitors, inductors, and resistors that have been selected in such a way as to present a relative minimum (maximum) impedance to one or more specific frequencies.
RT acousto-optics
adaptive filters
charge transfer devices
crystal filters
electric filters
electro-optics
∞ filters
microwave filters
optical filters
radio filters
tuning

tunable lasers
DEF Stimulated emission devices with selectable frequency output.
GS stimulated emission devices
. lasers
. . tunable lasers
RT DBR lasers
diffraction radiation
light modulation
optical communication
tuning
wiggler magnets

tundra
DEF A treeless, level or gently undulating plain characteristic of arctic and subarctic regions. It usually has a marshy surface which supports a growth of mosses, lichens, and numerous low shrubs underlain by a dark, mucky soil and permafrost.
GS land
. plains
. . tundra
landforms
. plains
. . tundra
RT Arctic regions
Asia
geography
North America

tuners
GS tuners
. waveguide tuners
RT radio receivers
resonance probes
resonant frequencies
television receivers

tungstates
GS tungsten compounds
. tungstates
. . calcium tungstates
. . lead tungstates
. . zinc tungstates

tungsten
UF *wolfram*
GS chemical elements
. tungsten
metals
. refractory metals
. . tungsten
. transition metals
. . tungsten
refractory materials
. refractory metals
. . tungsten

tungsten alloys
GS alloys
. heat resistant alloys
. . refractory metal alloys
. . . tungsten alloys
refractory materials
. refractory metal alloys
. . tungsten alloys
RT hafnium alloys
Stellite (trademark)

tungsten carbides
GS carbon compounds
. carbides
. . tungsten carbides
tungsten compounds
. tungsten carbides

tungsten chlorides
GS halogen compounds
. chlorine compounds
. . chlorides
. . . tungsten chlorides
. halides
. . chlorides
. . . tungsten chlorides
. . metal halides
. . . tungsten halides
. . . . tungsten chlorides
tungsten compounds
. tungsten halides
. . tungsten chlorides

tungsten compounds
GS tungsten compounds
. tungstates
. . calcium tungstates
. . lead tungstates
. . zinc tungstates
. tungsten carbides
. tungsten halides
. . tungsten chlorides
. . tungsten fluorides
. tungsten oxides
. . scheelite
RT ∞ chemical compounds
Group 6B compounds
∞ metal compounds

tungsten fluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . tungsten fluorides
. halides
. . fluorides
. . . metal fluorides
. . . . tungsten fluorides
. . metal halides
. . . metal fluorides

. . . . tungsten fluorides
. . . tungsten halides
. . . . tungsten fluorides
tungsten compounds
. tungsten halides
. . tungsten fluorides

tungsten halides
GS halogen compounds
. halides
. . metal halides
. . . tungsten halides
. . . . tungsten chlorides
. . . . tungsten fluorides
tungsten compounds
. tungsten halides
. . tungsten chlorides
. . tungsten fluorides

tungsten inert gas welding
USE gas tungsten arc welding

tungsten isotopes
GS chemical elements
. nuclides
. . isotopes
. . . tungsten isotopes
metals
. refractory metals
. . tungsten isotopes
. transition metals
. . tungsten isotopes
refractory materials
. refractory metals
. . tungsten isotopes

tungsten oxides
GS chalcogenides
. oxides
. . metal oxides
. . . tungsten oxides
. . . . scheelite
tungsten compounds
. tungsten oxides
. . scheelite

Tunguak meteorite
UF *Tunguska event*
GS celestial bodies
. meteorites
. . stony meteorites
. . . Tunguak meteorite
RT meteorite collisions
meteorite craters

Tunguska event
USE Tunguak meteorite

tuning
GS tuning
. Schuler tuning
RT automatic frequency control
automatic gain control
dye lasers
frequency pulling
mistuning (turbomachinery)
Q factors
resonance
resonant frequencies
resonators
tunable filters
tunable lasers

tuning fork gyroscopes
GS gyroscopes
. tuning fork gyroscopes
RT resonators

Tunisia
GS nations
. Tunisia
RT Africa

tunnel cathodes
GS electrodes
. cathodes
. . tube cathodes
. . . tunnel cathodes
RT cold cathode tubes
cold cathodes
electron tubes
hollow cathodes
∞ tunnels

tunnel diodes
UF *Esaki diodes*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . tunnel diodes
RT electron tunneling
junction diodes
MIM diodes
negative conductance
negative resistance circuits
resonant tunneling
tunnel junctions
∞ tunnels

tunnel junctions
(added September 1993)
DEF An electronic device having an extremely thin potential barrier to electron flow, so that the transport characteristic (the current–voltage flow) is primarily governed by the quantum-mechanical tunneling process which permits electrons to penetrate the barrier.
RT barrier layers
electron tunneling
heterojunctions
Josephson junctions
photoconductors
quantum electronics
semiconductor devices
semiconductor junctions
solar cells
superconducting devices
tunnel diodes

tunnel resistors
USE electron tunneling resistors

∞ tunneling
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT electron tunneling
resonant tunneling
tunneling (excavation)

tunneling (excavation)
GS excavation
. tunneling (excavation)
RT bedrock
construction
drainage
drilling
jacks (lifts)
lining processes
rocks
soils
∞ tunneling
underground structures

∞ tunnels
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT gaps
hydraulic test tunnels
lunar shelters
passageways
streets
transfer tunnels
tunnel cathodes
tunnel diodes
wind tunnels

Tupolev aircraft
GS Tupolev aircraft
. TU–104 aircraft
. TU–124 aircraft
. TU–134 aircraft
. TU–154 aircraft
. TU–204 aircraft
RT ∞ aircraft

turbidity
GS electromagnetic properties
. optical properties
. . turbidity
RT absorptance
clarity
haze
light transmission
opacity
optical density
∞ properties
solubility
transparence

turbine blades
DEF The blades of a turbine wheel.
GS turbomachine blades
. turbine blades
RT ∞ blades
compressor blades
engine parts
fan blades
rotor blades (turbomachinery)
rotor stator interactions
stator blades
turbines

turbine engines
DEF Engines incorporating a turbine as a principal component; especially gas turbine engines.
GS engines
. turbine engines
. . gas turbine engines
. . . hydrogen engines
. . . jet engines
. . . . ramjet engines
. . . . . integral rocket ramjets
. . . . . low volume ramjet engines
. . . . . pulsejet engines
. . . . . supersonic combustion ramjet engines
. . . . . turboramjet engines
. . . . turbojet engines
. . . . . Bristol–Siddeley Olympus 593 engine
. . . . . Bristol–Siddeley Viper engine
. . . . . ducted fan engines
. . . . . J–33 engine
. . . . . J–34 engine
. . . . . J–47 engine
. . . . . J–52 engine
. . . . . J–57 engine
. . . . . J–58 engine
. . . . . J–65 engine

. . . . . J–69–T–25 engine
. . . . . J–71 engine
. . . . . J–73 engine
. . . . . J–75 engine
. . . . . J–79 engine
. . . . . J–85 engine
. . . . . J–93 engine
. . . . . RA–28 engine
. . . . . turbofan engines
. . . . . Bristol–Siddeley BS 53 engine
. . . . . CF–700 engine
. . . . . convertible fan–shaft engines
. . . . . J–97 engine
. . . . . TF–30 engine
. . . . . TF–34 engine
. . . . . TF–41 engine
. . . . . turboprop engines
. . . . . T–34 engine
. . . . . T–38 engine
. . . . . T–53 engine
. . . . . T–55 engine
. . . . . T–56 engine
. . . . . T–63 engine
. . . . . T–64 engine
. . . . . T–74 engine
. . . . . T–76 engine
. . . . . T–78 engine
. . . . . turboramjet engines
. . . T–58 engine
RT aircraft engines
automobile engines
convergent nozzles
gas bearings
integral rocket ramjets
torpedo engines

turbine exhaust nozzles
GS exhaust nozzles
. turbine exhaust nozzles
RT conical nozzles
convergent–divergent nozzles

turbine instruments
RT flowmeters
∞ instruments
turbomachinery

turbine pumps
UF *turbopumps*
GS pumps
. axial flow pumps
. . turbine pumps
turbomachinery
. turbine pumps
RT centrifugal pumps
fuel pumps
jet pumps
preburners
turbines
turbocompressors

turbine wheels
DEF Multivaned wheels or rotors, especially in gas turbine engines, rotated by the impulse from or reaction to a fluid passing across the vanes. Used for rotor disks and turborotors.
UF *rotor disks*
turborotors
GS rotating bodies
. rotors
. . turbine wheels
wheels
. turbine wheels
RT compressor rotors
engine parts
hydraulic equipment
impellers
turbines
turbomachine blades
water wheels

turbines
GS turbomachinery
. turbines
. . axial flow turbines
. . gas turbines
. . shrouded turbines
. . steam turbines
. . supersonic turbines
. . two stage turbines
. . wind turbines
. . . tip vanes
RT engines
geothermal energy conversion
geothermal energy extraction
impellers
impulse generators
jet engine fuels
jet propulsion
∞ nozzles
refractories
rotating generators
rotors
stators
turbine blades
turbine pumps
turbine wheels
turbogenerators
turboshafts

Turbo–Skyvan aircraft
USE **SC–7 aircraft**

turbochargers
USE **superchargers**
turbocompressors

turbocompressors
UF *axial compressors*
axial flow compressors
multistage compressors
turbochargers
GS compressors
. turbocompressors
turbomachinery
. turbocompressors
RT centrifugal compressors
centrifugal pumps
compressor blades
compressor rotors
rotating stalls
rotors
superchargers
supersonic compressors
transonic compressors
turbine pumps
turbofans

turboconverters
USE **turbogenerators**

turboelectric conversion
USE **turbogenerators**

turbofan aircraft
GS jet aircraft
. turbofan aircraft
. . A–7 aircraft
. . BAC 111 aircraft
. . Boeing 707 aircraft
. . Boeing 720 aircraft
. . Boeing 727 aircraft
. . Boeing 733 aircraft
. . Boeing 737 aircraft
. . Boeing 757 aircraft
. . Boeing 767 aircraft
. . C–141 aircraft
. . CL–600 challenger aircraft
. . Concorde aircraft
. . CV–990 aircraft
. . DC 8 aircraft
. . DH 121 aircraft
. . DO–31 aircraft
. . F–5 aircraft
. . F–28 transport aircraft
. . F–111 aircraft
. . IL–62 aircraft
. . Mystere 20 aircraft
. . P–1127 aircraft
. . P–1154 aircraft
. . Saab 37 aircraft
. . Saab 105 aircraft
. . SE–210 aircraft
. . TU–134 aircraft
. . TU–144 aircraft
RT ∞ aircraft
C–135 aircraft
∞ low wing aircraft
passenger aircraft
transport aircraft
turboprop aircraft

turbofan engines
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . Bristol–Siddeley BS 53 engine
. . . . . CF–700 engine
. . . . . convertible fan–shaft engines
. . . . . J–97 engine
. . . . . TF–30 engine
. . . . . TF–34 engine
. . . . . TF–41 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . Bristol–Siddeley BS 53 engine
. . . . . CF–700 engine
. . . . . convertible fan–shaft engines
. . . . . J–97 engine
. . . . . TF–30 engine
. . . . . TF–34 engine
. . . . . TF–41 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turbofan engines
. . . . . Bristol–Siddeley BS 53 engine
. . . . . CF–700 engine
. . . . . convertible fan–shaft engines
. . . . . J–97 engine
. . . . . TF–30 engine
. . . . . TF–34 engine
. . . . . TF–41 engine
RT B–52 aircraft
Boeing 747 aircraft
Boeing 767 aircraft
C–5 aircraft
C–17 aircraft
C–141 aircraft
DC 10 aircraft
ducted fan engines
L–1011 aircraft
Mystere 50 aircraft
P–1127 aircraft

P–1154 aircraft
TU–124 aircraft
turbofans
turboprop engines

turbofans
DEF Turbojet engines in which additional propulsive thrust is gained by extending a portion of the compressor or turbine blades outside the inner engine cases.
GS turbomachinery
. **turbofans**
RT ducted fans
∞ fans
lift fans
turbocompressors
turbofan engines

turbogenerators
UF *thermal power*
turboconverters
turboelectric conversion
GS electric generators
. rotating generators
. . **turbogenerators**
. . . ASTEC solar turboelectric generator
turbomachinery
. **turbogenerators**
. . ASTEC solar turboelectric generator
RT AC generators
∞ conversion
∞ electric power
electrical engineering
gas turbine engines
gas turbines
∞ generators
geothermal energy conversion
geothermal energy extraction
geothermal energy utilization
hydroelectric power stations
hydroelectricity
SNAP
SNAP 1
SNAP 2
SNAP 8
solar generators
space power reactors
space power unit reactors
steam turbines
turbines
wind turbines

turbojet aircraft
USE **jet aircraft**

turbojet engine control
GS engine control
. **turbojet engine control**
RT aircraft control
automatic control
∞ control
flight control
fuel control
remote control
servocontrol
thrust control

turbojet engines
DEF Jet engines incorporating a turbine driven air compressor to take in and compress the air for the combustion of fuel (or for heating by a nuclear reactor), the gases of combustion (or the heated air) being used both to rotate the turbine and create a thrust producing jet.
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . **turbojet engines**
. . . . . Bristol–Siddeley Olympus 593 engine
. . . . . Bristol–Siddeley Viper engine
. . . . . ducted fan engines
. . . . . J–33 engine
. . . . . J–34 engine
. . . . . J–47 engine
. . . . . J–52 engine
. . . . . J–57 engine
. . . . . J–58 engine
. . . . . J–65 engine
. . . . . J–69–T–25 engine
. . . . . J–71 engine
. . . . . J–73 engine
. . . . . J–75 engine
. . . . . J–79 engine
. . . . . J–85 engine
. . . . . J–93 engine
. . . . . RA–28 engine
. . . . . turbofan engines
. . . . . Bristol–Siddeley BS 53 engine
. . . . . CF–700 engine
. . . . . convertible fan–shaft engines
. . . . . J–97 engine
. . . . . TF–30 engine
. . . . . TF–34 engine
. . . . . TF–41 engine
. . . . . turboprop engines
. . . . . T–34 engine
. . . . . T–38 engine
. . . . . T–53 engine
. . . . . T–55 engine
. . . . . T–56 engine
. . . . . T–63 engine
. . . . . T–64 engine
. . . . . T–74 engine
. . . . . T–76 engine
. . . . . T–78 engine
. . . . . turboramjet engines
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . **turbojet engines**
. . . . . Bristol–Siddeley Olympus 593 engine
. . . . . Bristol–Siddeley Viper engine
. . . . . ducted fan engines
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. . . . . J–58 engine
. . . . . J–65 engine
. . . . . J–69–T–25 engine
. . . . . J–71 engine
. . . . . J–73 engine
. . . . . J–75 engine
. . . . . J–79 engine
. . . . . J–85 engine
. . . . . J–93 engine
. . . . . RA–28 engine
. . . . . turbofan engines
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. . . . . CF–700 engine
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. . . . . TF–41 engine
. . . . . turboprop engines
. . . . . T–34 engine
. . . . . T–38 engine
. . . . . T–53 engine
. . . . . T–55 engine
. . . . . T–56 engine
. . . . . T–63 engine
. . . . . T–64 engine
. . . . . T–74 engine
. . . . . T–76 engine
. . . . . T–78 engine
. . . . . turboramjet engines
. . gas turbine engines
. . . jet engines
. . . . **turbojet engines**
. . . . . Bristol–Siddeley Olympus 593 engine
. . . . . Bristol–Siddeley Viper engine
. . . . . ducted fan engines
. . . . . J–33 engine
. . . . . J–34 engine
. . . . . J–47 engine
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. . . . . J–73 engine
. . . . . J–75 engine
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. . . . . J–85 engine
. . . . . J–93 engine
. . . . . RA–28 engine
. . . . . turbofan engines
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. . . . . CF–700 engine
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. . . . . T–34 engine
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. . . . . T–56 engine
. . . . . T–63 engine
. . . . . T–64 engine
. . . . . T–74 engine
. . . . . T–76 engine
. . . . . T–78 engine
. . . . . turboramjet engines
RT convergent nozzles
Hound Dog missile
jet aircraft
Mace missiles
quail missile
ramjet engines
Regulus missile

turbomachine blades
GS turbomachine blades
. compressor blades
. rotor blades (turbomachinery)
. stator blades
. turbine blades
RT airfoils
∞ blades
∞ buckets
cascade flow
fan blades
impellers
mistuning (turbomachinery)
paddles
rotors
turbine wheels

vanes

turbomachinery
GS turbomachinery
. centrifugal compressors
. centrifugal pumps
. J–33 engine
. turbine pumps
. turbines
. . axial flow turbines
. . gas turbines
. . shrouded turbines
. . steam turbines
. . supersonic turbines
. . two stage turbines
. . wind turbines
. . . tip vanes
. turbocompressors
. turbofans
. turbogenerators
. . ASTEC solar turboelectric generator
RT blowers
compressors
∞ machinery
pumps
rotating generators
rotor dynamics
superchargers
turbine instruments

turbopause
GS Earth atmosphere
. upper atmosphere
. . thermosphere
. . . turbopause
RT atmospheric circulation
atmospheric physics
atmospheric turbulence

turboprop aircraft
GS jet aircraft
. turboprop aircraft
. . AN–22 aircraft
. . AN–24 aircraft
. . Argosy MK–1 aircraft
. . ATR–72 aircraft
. . Breguet 941 aircraft
. . Breguet 1150 aircraft
. . C–2 aircraft
. . C–130 aircraft
. . C–133 aircraft
. . C–160 aircraft
. . CL–44 aircraft
. . CL–84 aircraft
. . DHC 5 aircraft
. . DO–328 aircraft
. . E–2 aircraft
. . Electra aircraft
. . F–27 aircraft
. . G–222 aircraft
. . HS–748 aircraft
. . MH–262 aircraft
. . OV–1 aircraft
. . OV–10 aircraft
. . P–3 aircraft
. . SC–5 aircraft
. . Viscount aircraft
. . YS–11 aircraft
RT ∞ aircraft
general aviation aircraft
∞ low wing aircraft
passenger aircraft
∞ subsonic aircraft
transport aircraft
turbofan aircraft

turboprop engines
UF *Dart turboprop engines*
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . T–34 engine
. . . . . T–38 engine
. . . . . T–53 engine
. . . . . T–55 engine
. . . . . T–56 engine
. . . . . T–63 engine
. . . . . T–64 engine
. . . . . T–74 engine
. . . . . T–76 engine
. . . . . T–78 engine
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . T–34 engine
. . . . . T–38 engine
. . . . . T–53 engine
. . . . . T–55 engine
. . . . . T–56 engine
. . . . . T–63 engine
. . . . . T–64 engine
. . . . . T–74 engine
. . . . . T–76 engine
. . . . . T–78 engine
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . . turboprop engines
. . . . . T–34 engine
. . . . . T–38 engine
. . . . . T–53 engine
. . . . . T–55 engine
. . . . . T–56 engine
. . . . . T–63 engine
. . . . . T–64 engine
. . . . . T–74 engine
. . . . . T–76 engine
. . . . . T–78 engine
RT C–160 aircraft
contrarotating propellers
E–2 aircraft
P–3 aircraft
prop–fan technology
turbofan engines
XC–142 aircraft

turbopumps
USE turbine pumps

turboramjet engines
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . turboramjet engines
. . . . turbojet engines
. . . . . turboramjet engines
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . turboramjet engines
. . . . turbojet engines
. . . . . turboramjet engines
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. . . . . turboramjet engines
. . . . turbojet engines
. . . . . turboramjet engines
RT ∞ hybrid rocket engines

turborocket engines
GS engines
. rocket engines
. . turborocket engines
. torpedo engines
. . turborocket engines
RT booster rocket engines
hydrazine engines
hydrogen oxygen engines
liquid air cycle engines
restartable rocket engines
sustainer rocket engines

turborotors
USE turbine wheels

turboshafts
GS shafts (machine elements)
. rotating shafts
. . turboshafts
RT convertible fan–shaft engines
rotors
turbines

turbulence
DEF A state of fluid flow in which the instantaneous velocities exhibit irregular and apparently random fluctuations so that in practice only statistical properties can be recognized and subjected to analysis.
GS turbulence
. atmospheric turbulence
. . clear air turbulence
. . gusts
. . low level turbulence
. homogeneous turbulence
. isotropic turbulence
. low turbulence
. magnetohydrodynamic turbulence
. . plasma turbulence
. . . Langmuir turbulence
RT aerodynamic drag
atmospheric effects
backwash
boundary layer control
boundary layer transition
flow characteristics
fluid dynamics
gas streams
micrometeorology
mixing
∞ motion
nonuniformity
panel method (fluid dynamics)
period doubling
sea roughness
slipstreams
steady flow
strange attractors
Strouhal number
surface noise interactions
turbulent boundary layer
turbulent flow
unsteady flow
vertical air currents
vortex filaments
vortices
vorticity
wakes
wind effects

turbulence effects
RT aerodynamic stability
buffeting
∞ effects
flutter
seeing (astronomy)
separated flow

turbulence meters
UF *hot-wire turbulence meters*
GS measuring instruments
. turbulence meters
RT hot-wire flowmeters

turbulence models
(added September 1988)
GS models
. mathematical models
. . turbulence models
. . . Baldwin–Lomax turbulence model
. . . k–epsilon turbulence model
. . . k–omega turbulence model
RT computational fluid dynamics
flow equations
large eddy simulation
mixing length flow theory
renormalization group methods
Reynolds averaging
turbulent boundary layer
turbulent combustion
turbulent flow

turbulent boundary layer
DEF The layer in which the Reynolds stresses are much larger than the viscous stresses. When the Reynolds number is sufficiently high, there is a turbulent layer adjacent to the laminar boundary layer.
GS boundary layers
. turbulent boundary layer
RT Baldwin–Lomax turbulence model
boundary layer transition
compressible boundary layer
Ekman layer
hypersonic boundary layer
incompressible boundary layer
k–epsilon turbulence model
k–omega turbulence model
laminar boundary layer
∞ layers
mixing layers (fluids)
Reynolds stress
riblets
supersonic boundary layers
thermal boundary layer
three dimensional boundary layer
turbulence
turbulence models
two dimensional boundary layer

turbulent combustion
(added September 1992)
DEF Combustion or combustible flow in which turbulence is superimposed on the main movement of the flame fronts resulting in random, unpredictable fluctuations.
GS combustion
. turbulent combustion
RT chemical explosions
combustible flow
combustion physics
combustion stability
flame propagation
flames
fuel combustion
oxidation
premixed flames
propellant combustion
reacting flow
turbulence models
turbulent flames
turbulent flow

turbulent diffusion
UF *eddy diffusion*
GS diffusion
. turbulent diffusion
RT atmospheric diffusion
atmospheric turbulence
clear air turbulence
counterflow

turbulent flames
(added June 1997)
GS flames
. turbulent flames
RT combustible flow
flame propagation
flame stability
premixed flames
turbulent combustion
turbulent flow

turbulent flow
DEF Fluid motion in which random motions of parts of the fluid are superimposed upon a simple pattern of flow. All or nearly all fluid flow displays some degree of turbulence. The opposite is laminar flow.
GS fluid flow
. turbulent flow
. . cavitation flow
. . . supercavitating flow
RT aerodynamic interference
aerodynamics
annular flow
atmospheric turbulence
Baldwin–Lomax turbulence model
Blasius flow
boundary layer transition
closure law
combustible flow
counterflow
critical flow
direct numerical simulation
eddy viscosity
flow characteristics
flow stability
fluid amplifiers
free convection
gas flow
gust alleviators
inviscid flow
isotropic turbulence
k–epsilon turbulence model
Kolmogorov theory
k–omega turbulence model
Lagrange similarity hypothesis
laminar flow
large eddy simulation
liquid flow
mass flow
mixing length flow theory
multiphase flow
nonuniform flow
open channel flow
orifice flow
particle laden jets
period doubling
pipe flow
pressure oscillations
reacting flow
recirculative fluid flow
Reynolds number
Reynolds stress
rotating fluids
single-phase flow
steady flow
steam flow
subcritical flow
supercritical flow
Tollmien–Schlichting waves
∞ transition layers
turbulence
turbulence models
turbulent combustion
turbulent flames
two phase flow
uniform flow
viscous drag
viscous flow
vortex avoidance
vortex breakdown
vortices
vorticity transport hypothesis

turbulent heat transfer
GS transmission
. heat transmission
. . heat transfer
. . . turbulent heat transfer
RT aerodynamic heat transfer
convective heat transfer
laminar heat transfer
thermohydraulics

turbulent jets
RT fluid amplifiers
jet streams (meteorology)
∞ jets

turbulent mixing
GS mixing
. turbulent mixing
RT agitation
laminar mixing
mixing layers (fluids)
mixing length flow theory
recirculative fluid flow
trapped vortices
vortices

turbulent wakes
UF *swirling wakes*
GS wakes
. turbulent wakes
. . slipstreams
. . . propeller slipstreams
RT aircraft wakes
laminar wakes
trapped vortices
vortex advisory system
vortex sheets
vortex streets

Turing machines
DEF Mathematical models of devices that change their internal states and read from, write on, and move potentially infinite tapes, all in accordance with their present states, thereby constituting models for computerlike behavior. Invented in the 1930s, they are named after their inventor, A.M. Turing. Used for finite-state machines.
UF *finite-state machines*
RT automata theory
digital computers
∞ machinery
mathematical logic
self organizing systems

Turkey
GS nations
. Turkey
RT Black Sea
Europe
Turkish space program

turkeys
GS animals
. vertebrates
. . birds
. . . turkeys
RT livestock

Turkish space program
(added August 1990)
GS programs
. space programs
. . European space programs
. . . Turkish space program
RT Turkey

Turkmenistan
(added August 1993)
GS nations
. Turkmenistan
RT Asia

turnaround (STS)
DEF The intervals between flights of the shuttle orbiters.
RT downtime
flight time
launch dates
schedules
sequencing
spacecraft maintenance
testing time

turning flight
UF *banking flight*
GS turning flight
. minor circle turning flight
RT aerodynamic balance
aircraft maneuvers
aircraft stability
climbing flight
∞ flight
flight paths
horizontal flight
lateral oscillation
lateral stability
maneuvers
momentum
roll
yaw

turnstile antennas
DEF Antennas composed of two dipole antennas, normal to each other, with their axes intersecting at their midpoints. Usually, the currents are equal and in phase quadrature.
GS antennas
. omnidirectional antennas
. . turnstile antennas
arrays
. antenna arrays
. . turnstile antennas
RT dipole antennas
∞ grids
wire grid lenses

turpentine
GS solvents
. turpentine
terpenes
. turpentine
RT paints

∞ turret
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT gun turrets
turret lathes

turret lathes
GS tools
. machine tools
. . lathes
. . . turret lathes
RT∞ turret

turtles
GS animals
. vertebrates
. . reptiles
. . . turtles

Tutor aircraft
USE CL–41 aircraft

TVC (control)
USE thrust vector control

TVD schemes
(added August 1989)
UF *total variation diminishing schemes*
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . TVD schemes
RT computational fluid dynamics
essentially non–oscillatory schemes
finite difference theory
finite volume method

twenty–four hour orbits
GS orbits
. Earth orbits
. . twenty–four hour orbits
. spacecraft orbits
. . satellite orbits
. . . twenty–four hour orbits
RT circular orbits
equatorial orbits
geosynchronous orbits
orbital mechanics
PAS
planetary orbits
polar orbits
stationary orbits
Synchronous Communications Satellite Proj
synchronous satellites

twenty–seven day variation
GS variations
. twenty–seven day variation
RT solar cycles
solar rotation
starspots
sunspots

twilight glow
GS atmospheric radiation
. sky radiation
. . airglow
. . . twilight glow
electromagnetic radiation
. light (visible radiation)
. . sky radiation
. . . airglow
. . . . twilight glow
RT dayglow
night
night sky

twinning
GS twinning
. mechanical twinning
RT crystal defects
crystal growth
crystal structure
grain boundaries
stacking fault energy

twisted wings
GS airfoils
. wings
. . twisted wings
RT cambered wings
fixed wings
flexible wings
ring wings
uncambered wings

twisting
UF *pretwisting*
RT bending
buckling
deformation
distortion
structural strain
torque
torsion
torsional vibration
warpage
winding

twitching
RT involuntary actions
muscles
muscular function

two body orbits
USE two body problem

two body problem
DEF That problem in classical celestial mechanics which treats of the relative motion of two point masses under their mutual gravitational attraction. Used for two body orbits.
UF *two body orbits*
RT binary stars
celestial mechanics
Earth–Moon system
Hyllemas coordinates
many body problem
orbital mechanics
orbits
perturbation
∞ problems
Roche limit
three body problem

two dimensional bodies
RT∞ bodies
∞ cross sections
ducted bodies
mathematical models
∞ surfaces

two dimensional boundary layer
GS boundary layers
. two dimensional boundary layer
RT laminar boundary layer
supersonic boundary layers
turbulent boundary layer

two dimensional flow
GS fluid flow
. two dimensional flow
. . Couette flow
RT axial flow
Blasius flow
capillary waves

coaxial flow
flow geometry
Hartmann flow
one dimensional flow
Prandtl–Meyer expansion
radial flow
Rayleigh waves
steady flow
stream functions (fluids)
Taylor instability
three dimensional flow
wall flow
wedge flow

two dimensional jets
RT jet flow
jet mixing flow
∞ jets
wall flow

two dimensional models
(added August 1988)
GS models
. **two dimensional models**
RT computerized simulation
mathematical models
three dimensional models

two fluid models
RT Boltzmann distribution
liquid helium
magnetohydrodynamic flow
mixing layers (fluids)
rotating plasmas
shock wave propagation
superfluidity

two phase flow
GS fluid flow
. multiphase flow
. . **two phase flow**
RT gas flow
laminar flow
liquid flow
particle image velocimetry
∞ pressure drop
single-phase flow
solids flow
turbulent flow

two phase systems
USE **binary systems (materials)**

two photon coherent states
USE **squeezed states (quantum theory)**

two reflector antennas
GS antennas
. directional antennas
. . reflector antennas
. . . **two reflector antennas**
RT Cassegrain antennas
radio antennas
reflectometers
reflectors

two stage plasma engines
GS engines
. rocket engines
. . electric rocket engines
. . . electrothermal engines
. . . . plasma engines
. . . . . **two stage plasma engines**
plasma power sources
. plasma engines
. . **two stage plasma engines**
RT electric propulsion
plasmas (physics)

two stage turbines
GS turbomachinery
. turbines
. . **two stage turbines**
RT gas turbine engines
gas turbines
steam turbines

two–wavelength lasers
GS stimulated emission devices
. lasers
. . **two–wavelength lasers**
RT coherent light
dye lasers
laser outputs
masers
molecular oscillators
quantum amplifiers
stimulated emission

TX–33–39 engine
USE **XM–33 engine**

TX–354 engine
UF *Castor 2 engine*
GS engines
. rocket engines
. . solid propellant rocket engines
. . . **TX–354 engine**
RT booster rocket engines
Little Joe 2 launch vehicle
RAM B launch vehicle
Scout launch vehicle
sustainer rocket engines
Trailblazer 2 reentry vehicle
XM–33 engine

TX–77 engine
GS engines
. rocket engines
. . solid propellant rocket engines
. . . **TX–77 engine**
RT Lance missile

Tycho crater
GS craters
. lunar craters
. . **Tycho crater**
RT meteorite craters

type 2 bursts
GS bursts
. radio bursts
. . solar radio bursts
. . . **type 2 bursts**
electromagnetic radiation
. radio waves
. . extraterrestrial radio waves
. . . radio bursts
. . . . solar radio bursts
. . . . . **type 2 bursts**
. . . solar radio emission
. . . . solar radio bursts
. . . . . **type 2 bursts**
. . radio emission
. . . radio bursts
. . . . solar radio bursts
. . . . . **type 2 bursts**
. . . solar radio emission
. . . . solar radio bursts
. . . . . **type 2 bursts**
emission
. radio emission
. . radio bursts
. . . solar radio bursts
. . . . **type 2 bursts**
. . solar radio emission
. . . solar radio bursts
. . . . **type 2 bursts**
. solar radiation
. . solar radio emission
. . . solar radio bursts
. . . . **type 2 bursts**

type 3 bursts
GS bursts
. radio bursts
. . solar radio bursts
. . . **type 3 bursts**
electromagnetic radiation
. radio waves
. . extraterrestrial radio waves
. . . radio bursts
. . . . solar radio bursts
. . . . . **type 3 bursts**
. . . solar radio emission
. . . . solar radio bursts
. . . . . **type 3 bursts**
. . radio emission
. . . radio bursts
. . . . solar radio bursts
. . . . . **type 3 bursts**
. . . solar radio emission
. . . . solar radio bursts
. . . . . **type 3 bursts**
emission
. radio emission
. . radio bursts
. . . solar radio bursts
. . . . **type 3 bursts**
. . solar radio emission
. . . solar radio bursts
. . . . **type 3 bursts**
extraterrestrial radiation
. extraterrestrial radio waves
. . radio bursts
. . . solar radio bursts
. . . . **type 3 bursts**
. . solar radio emission
. . . solar radio bursts
. . . . **type 3 bursts**
. solar radiation
. . solar radio emission
. . . solar radio bursts
. . . . **type 3 bursts**

type 4 bursts
GS bursts
. radio bursts
. . solar radio bursts
. . . **type 4 bursts**
electromagnetic radiation
. radio waves
. . extraterrestrial radio waves
. . . radio bursts
. . . . solar radio bursts
. . . . . **type 4 bursts**
. . . solar radio emission
. . . . solar radio bursts
. . . . . **type 4 bursts**
. . radio emission
. . . radio bursts
. . . . solar radio bursts
. . . . . **type 4 bursts**
. . . solar radio emission
. . . . solar radio bursts
. . . . . **type 4 bursts**

emission
. radio emission
. . radio bursts
. . . solar radio bursts
. . . . type 4 bursts
. . solar radio emission
. . . solar radio bursts
. . . . type 4 bursts
extraterrestrial radiation
. extraterrestrial radio waves
. . radio bursts
. . . solar radio bursts
. . . . type 4 bursts
. . solar radio emission
. . . solar radio bursts
. . . . type 4 bursts
. solar radiation
. . solar radio emission
. . . solar radio bursts
. . . . type 4 bursts

type 5 bursts
GS bursts
. radio bursts
. . solar radio bursts
. . . type 5 bursts
electromagnetic radiation
. radio waves
. . extraterrestrial radio waves
. . . radio bursts
. . . . solar radio bursts
. . . . . type 5 bursts
. . . solar radio emission
. . . . solar radio bursts
. . . . . type 5 bursts
. . radio emission
. . . radio bursts
. . . . solar radio bursts
. . . . . type 5 bursts
. . . solar radio emission
. . . . solar radio bursts
. . . . . type 5 bursts
emission
. radio emission
. . radio bursts
. . . solar radio bursts
. . . . type 5 bursts
. . solar radio emission
. . . solar radio bursts
. . . . type 5 bursts
extraterrestrial radiation
. extraterrestrial radio waves
. . radio bursts
. . . solar radio bursts
. . . . type 5 bursts
. . solar radio emission
. . . solar radio bursts
. . . . type 5 bursts
. solar radiation
. . solar radio emission
. . . solar radio bursts
. . . . type 5 bursts

typewriters
GS typewriters
. automatic typewriters
. teletypewriters
. . teleprinters
RT printers

typhoid
GS diseases
. infectious diseases
. . bacterial diseases
. . . typhoid

Typhon weapon system
GS weapon systems
. Typhon weapon system
RT Bumblebee project
∞ systems

typhoons
GS storms
. storms (meteorology)
. . cyclones
. . . typhoons
. . tropical storms
. . . typhoons
RT atmospheric circulation
hurricanes
marine meteorology
meteorology
storm damage
tornadoes

typhus
GS diseases
. infectious diseases
. . bacterial diseases
. . . typhus

tyrosine
GS acids
. amino acids
. . tyrosine
organic compounds
. amino acids
. . tyrosine
RT enzyme activity
liver

U

U bends
GS pipes (tubes)
. **U bends**
RT fittings

U spin space
GS algebra
. vector spaces
. . **U spin space**
RT matrices (mathematics)
quantum mechanics

U tubes
USE **manometers**

U-2 aircraft
UF *ER-2 aircraft*
Lockheed U-2 aircraft
WU-2 aircraft
GS jet aircraft
. **U-2 aircraft**
Lockheed aircraft
. **U-2 aircraft**
monoplanes
. **U-2 aircraft**
reconnaissance aircraft
. **U-2 aircraft**
research vehicles
. research aircraft
. . **U-2 aircraft**
utility aircraft
. **U-2 aircraft**
RT ∞ aircraft

U-10 aircraft
UF *Courier aircraft*
L-28 aircraft
GS Helio aircraft
. **U-10 aircraft**
light aircraft
. **U-10 aircraft**
monoplanes
. **U-10 aircraft**
passenger aircraft
. **U-10 aircraft**
utility aircraft
. **U-10 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **U-10 aircraft**
RT ∞ aircraft

U.S.S.R.
UF *Soviet Union*
GS nations
. **U.S.S.R.**
RT Asia
Barents Sea
Black Sea
Caucasus Mountains (U.S.S.R.)
Europe
Kurile Islands
Moscow
Sea of Okhotsk
Siberia

U.S.S.R. space program
GS programs
. space programs
. . European space programs
. . . **U.S.S.R. space program**
RT Apollo Soyuz test project
Automatic Universal Orbiting Stations
Buran space shuttle
GLONASS
international cooperation
international relations
International Satellite Geodesy Experiment
lunar retroreflectors
Lunik 19 lunar probe
Lunik 22 lunar probe
Lunik lunar probes
Lunokhod lunar roving vehicles
Mars 1 spacecraft
Mars 2 spacecraft
Mars 3 spacecraft
Mars 4 Spacecraft
Mars 5 spacecraft
Mars 6 spacecraft
Mars 7 spacecraft
Mir space station
Molniya satellites
Proton satellites
Russian Space Program
Salyut space station
Soyuz spacecraft
Vega project
Venera 8 satellite
Venera 10 satellite
Venera 11 satellite
Venera 12 satellite
Venera satellites

UARS (satellite)
USE **Upper Atmosphere Research Satellite (UARS)**

UBV spectra
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . **UBV spectra**
RT color–color diagram

Udimet alloys
GS alloys
. heat resistant alloys
. . **Udimet alloys**
. nickel alloys
. . **Udimet alloys**

UFO
USE **unidentified flying objects**

Uganda
GS nations
. **Uganda**
RT Africa

UH-1 helicopter
UF *HU-1 helicopter*
Iroquois helicopter
RH-2 helicopter
YHU-1 helicopter
YUH-1 helicopter
GS Bell aircraft
. **UH-1 helicopter**
utility aircraft
. **UH-1 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **UH-1 helicopter**
RT UH-60A helicopter
UH-61A helicopter

UH-2 helicopter
UF *HU2K-1 helicopter*
Kaman UH-2A helicopter
Seasprite helicopter
GS Kaman aircraft
. **UH-2 helicopter**
utility aircraft
. **UH-2 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **UH-2 helicopter**

UH-12 helicopter
USE **OH-23 helicopter**

UH-13 helicopter
USE **OH-13 helicopter**

UH-34 helicopter
UF *HUS-1 helicopter*
Seahorse helicopter
GS Sikorsky aircraft
. **UH-34 helicopter**
transport aircraft
. **UH-34 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **UH-34 helicopter**
RT S-58 helicopter

UH-60A helicopter
UF *YUH-60A helicopter*
GS Sikorsky aircraft
. **UH-60A helicopter**
transport aircraft
. **UH-60A helicopter**
utility aircraft
. **UH-60A helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **UH-60A helicopter**
RT helicopter design
UH-1 helicopter

UH-61A helicopter
UF *YUH-61A helicopter*
GS Sikorsky aircraft
. **UH-61A helicopter**
transport aircraft
. **UH-61A helicopter**
utility aircraft
. **UH-61A helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **UH-61A helicopter**
RT helicopter design
UH-1 helicopter

UHTREX (nuclear reactors)
USE **high temperature nuclear reactors**

Uhuru satellite
UF *Explorer 42 satellite*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **Uhuru satellite**
RT galactic radiation
SAS

satellite observation
x ray astronomy
x ray stars

UK 4 satellite
GS artificial satellites
. scientific satellites
. . UK satellites
. . . UK 4 satellite

UK satellites
UF *United Kingdom satellites*
GS artificial satellites
. scientific satellites
. . UK satellites
. . . Ariel 4 satellite
. . . Ariel 5 satellite
. . . Miranda satellite
. . . UK 4 satellite
RT Infrared Astronomy Satellite
Skynet satellites
UK space program

UK space program
GS programs
. space programs
. . European space programs
. . . UK space program
RT HOTOL launch vehicle
UK satellites
United Kingdom

Ukraine
(added August 1993)
GS nations
. Ukraine
RT Europe

ulcers
GS diseases
. ulcers
RT cancer

ullage
DEF The amount that a container, such as a fuel tank, lacks of being full.
RT fuel tank pressurization
fuel tanks
interface stability
liquid sloshing
propellant tanks
sloshing
tank geometry
ullage rocket engines

ullage rocket engines
GS engines
. rocket engines
. . ullage rocket engines
. torpedo engines
. . ullage rocket engines
RT solid propellant rocket engines
ullage

ULM (light modulation)
USE **ultrasonic light modulation**

ulna
GS anatomy
. musculoskeletal system
. . bones
. . . ulna
RT arm (anatomy)
elbow (anatomy)

ultra short wave radio equipment
USE **very high frequency radio equipment**

ultrahigh frequencies
SN (300 TO 3000 MHZ)
UF *L band*
S band
GS frequencies
. radio frequencies
. . ultrahigh frequencies
. . . P band
RT decimeter waves
EISCAT radar system (Europe)
Fleet Satellite Communication System
low frequencies
passive L-band radiometers
prestersonic devices
unified S band
very high frequency radio equipment

ultrahigh vacuum
GS pressure
. vacuum
. . ultrahigh vacuum
RT high vacuum
low density research
residual gas
vacuum apparatus
vacuum tests

ultralight aircraft
DEF An aircraft for one person weighing less than 254 pounds with a top speed of 55 knots and a maximum stalling speed of 24 knots.
RT ∞ aircraft
hang gliders
light aircraft
man powered aircraft
∞ winged vehicles

ultralow frequencies
USE **extremely low frequencies**

ultralow temperature
USE **cryogenic temperature**

ultrapure metals
GS metals
. ultrapure metals
RT crystal lattices
impurities
purification
purity
single crystals
space processing
vapor deposition
zone melting

ultrashort pulsed lasers
GS stimulated emission devices
. lasers
. . pulsed lasers
. . . ultrashort pulsed lasers
RT glass lasers
laser applications
light amplifiers
pulse duration
quantum amplifiers
stimulated emission

ultrasonic agitation
GS agitation
. ultrasonic agitation
RT ultrasonics

ultrasonic cleaning
GS cleaning
. ultrasonic cleaning
RT acoustics
cavitation flow
cleaners
etching
fluid flow
grinding machines
machine tools
piezoelectric transducers
polishing
tools
transducers
ultrasonics

ultrasonic densimeters
DEF Density measuring instruments utilizing ultrasonic devices (sensors).
GS measuring instruments
. densimeters
. . ultrasonic densimeters
RT density (mass/volume)
density measurement
∞ instruments
∞ measurement

ultrasonic flaw detection
GS detection
. ultrasonic flaw detection
RT acoustic imaging
∞ detectors
examination
identifying
inspection
nondestructive tests
quality control
ultrasonic scanners

ultrasonic grinding machines
USE **ultrasonic machining**

ultrasonic light modulation
UF *ULM (light modulation)*
GS modulation
. light modulation
. . ultrasonic light modulation
RT Bragg cells
ultrasonics

ultrasonic machining
UF *ultrasonic grinding machines*
GS machining
. ultrasonic machining
RT ultrasonics

ultrasonic radiation
UF *ultrasonic waves*
GS elastic waves
. ultrasonic radiation
RT acoustic frequencies
coherent acoustic radiation
magnetoelastic waves
∞ radiation
sound waves
ultrasonics
underwater acoustics

ultrasonic scanners
GS scanners
. ultrasonic scanners
RT acoustics
imaging techniques
measuring instruments
scanning
ultrasonic flaw detection
ultrasonics

ultrasonic soldering
UF *sonic soldering*
GS soldering
. ultrasonic soldering
RT brazing
∞ joining
ultrasonic welding
ultrasonics

ultrasonic spectroscopy
GS spectroscopy
. ultrasonic spectroscopy
RT cracks
nondestructive tests
spectrum analysis

ultrasonic tests
RT acoustic measurement
acoustic sounding
dynamic modulus of elasticity
Lamb waves
∞ materials tests
nondestructive tests
SH waves
∞ tests
ultrasonics

ultrasonic wave transducers
GS transducers
. ultrasonic wave transducers
RT electroacoustics
electronic transducers
microphones
pressure sensors
sonar
surface acoustic wave devices
ultrasonics
underwater acoustics

ultrasonic waves
USE ultrasonic radiation

ultrasonic welding
GS welding
. pressure welding
. . ultrasonic welding
RT spot welds
ultrasonic soldering
ultrasonics

ultrasonics
DEF The technology of sound at frequencies above the audio frequency range.
RT acoustics
electroacoustics
ultrasonic agitation
ultrasonic cleaning
ultrasonic light modulation
ultrasonic machining
ultrasonic radiation
ultrasonic scanners
ultrasonic soldering
ultrasonic tests
ultrasonic wave transducers
ultrasonic welding

ultraviolet absorption
GS energy absorption
. radiation absorption
. . electromagnetic absorption
. . . ultraviolet absorption
RT ∞ absorption
ultraviolet detectors

ultraviolet astronomy
DEF Use of special optical instruments for the observation of astronomical phenomena in the ultraviolet spectrum.
GS astronomy
. ultraviolet astronomy
RT electromagnetic radiation
Extreme Ultraviolet Explorer satellite
Hubble Space Telescope
Lyman alpha radiation
Lyman beta radiation
Spartan satellites
Starlet telescope
telescopes
ultraviolet telescopes

ultraviolet detectors
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . ultraviolet detectors
. . . . ultraviolet spectrometers
. . . . . high dispersion spectrographs
. . . . . Total Ozone Mapping Spectrometer
. . . . ultraviolet spectrophotometers
RT ∞ detectors
photometers
radiometers
ultraviolet absorption
ultraviolet radiation
ultraviolet spectra
x ray detectors

ultraviolet emission
(added August 1991)
GS electromagnetic radiation
. ultraviolet radiation
. . ultraviolet emission
emission
. ultraviolet emission
RT emission spectra
spectral emission
ultraviolet spectra

ultraviolet filters
GS electromagnetic wave filters
. optical filters
. . ultraviolet filters
RT bandpass filters
electric filters
infrared filters

ultraviolet imagery
(added January 1997)
GS imagery
. ultraviolet imagery
. . ultraviolet photography
RT ultraviolet photometry
ultraviolet telescopes

ultraviolet lasers
UF *UV lasers*
GS stimulated emission devices
. lasers
. . gas lasers
. . . ultraviolet lasers
. . pulsed lasers
. . . ultraviolet lasers
RT coherent light
laser outputs
light amplifiers
light transmission
masers
molecular oscillators
nitrogen lasers
quantum amplifiers
stimulated emission
xenon chloride lasers

ultraviolet light
USE ultraviolet radiation

ultraviolet lithography
USE lithography

ultraviolet microscopy
GS microscopy
. ultraviolet microscopy
RT microscopes

ultraviolet photography
GS imagery
. photography
. . ultraviolet photography
. ultraviolet imagery
. . ultraviolet photography
RT aerial photography
cameras
color photography
faint object camera
infrared photography
radar photography

ultraviolet photometry
GS imagery
. photography
. . ultraviolet photometry
optical measurement
. photometry
. . ultraviolet photometry
RT black and white photography
ultraviolet imagery

ultraviolet radiation
DEF Electromagnetic radiation of shorter wavelength than visible radiation; roughly, radiation in the wavelength interval from 100 to 4000 angstroms. Used for ultraviolet light.
UF *ultraviolet light*
GS electromagnetic radiation
. ultraviolet radiation
. . extreme ultraviolet radiation
. . far ultraviolet radiation
. . . Lyman alpha radiation
. . . Lyman beta radiation
. . near ultraviolet radiation
. . ultraviolet emission
RT beams (radiation)
black body radiation
Cerenkov radiation
coherent electromagnetic radiation
coronal holes
dayglow
IUE
microchannels
monochromatic radiation
polarized electromagnetic radiation
∞ radiation
Seyfert galaxies
solar radiation
sterilization
sunlight
thermal radiation
ultraviolet detectors
Umkehr effect

ultraviolet reflection
GS reflection
. ultraviolet reflection
RT infrared reflection
radio echoes
reflectometers
spread reflection

ultraviolet spectra
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . ultraviolet spectra
RT absorption spectra
emission spectra
Herzberg bands
high dispersion spectrographs
light (visible radiation)
line spectra
Lyman spectra
molecular spectra

RT radio spectroscopy
solar spectra
stellar spectra
ultraviolet detectors
ultraviolet emission

ultraviolet spectrographs
USE **ultraviolet spectrometers**

ultraviolet spectrometers
UF *ultraviolet spectrographs*
GS measuring instruments
. optical measuring instruments
. . photometers
. . . **ultraviolet spectrometers**
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping Spectrometer
. radiation measuring instruments
. . actinometers
. . . ultraviolet detectors
. . . . **ultraviolet spectrometers**
. . . . . high dispersion spectrographs
. . . . . Total Ozone Mapping Spectrometer
. . photometers
. . . **ultraviolet spectrometers**
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping Spectrometer
. spectrometers
. . **ultraviolet spectrometers**
. . . high dispersion spectrographs
. . . Total Ozone Mapping Spectrometer
optical equipment
. optical measuring instruments
. . photometers
. . . **ultraviolet spectrometers**
. . . . high dispersion spectrographs
. . . . Total Ozone Mapping Spectrometer
RT Ebert spectrometers
Solar Maximum Mission
solar spectrometers

ultraviolet spectrophotometers
GS measuring instruments
. optical measuring instruments
. . photometers
. . . **ultraviolet spectrophotometers**
. . spectrophotometers
. . . **ultraviolet spectrophotometers**
. radiation measuring instruments
. . actinometers
. . . spectrophotometers
. . . . **ultraviolet spectrophotometers**
. . . ultraviolet detectors
. . . . **ultraviolet spectrophotometers**
. . photometers
. . . **ultraviolet spectrophotometers**
optical equipment
. optical measuring instruments
. . photometers
. . . **ultraviolet spectrophotometers**
. . spectrophotometers
. . . **ultraviolet spectrophotometers**

ultraviolet spectroscopy
GS spectroscopy
. **ultraviolet spectroscopy**
RT absorption spectroscopy
astronomical spectroscopy
molecular spectroscopy
optogalvanic spectroscopy
radio spectroscopy
spectroscopic analysis
spectrum analysis
vacuum spectroscopy
x ray spectroscopy

ultraviolet telescopes
DEF Optical telescopes designed to collect ultraviolet light (wavelengths not capable of passing through Earth's atmosphere) and as such must be used in space.
GS telescopes
. **ultraviolet telescopes**
. . Starlab
RT far ultraviolet radiation
spaceborne astronomy
ultraviolet astronomy
ultraviolet imagery
x ray astronomy

Ulysses mission
DEF A proposed ESA/NASA mission using the STS for orbital launching of two spin-stabilized spacecraft equipped with instruments for solar and astrophysical observations. Used for International Solar Polar Mission.
UF *International Solar Polar Mission*
GS space missions
. **Ulysses mission**
RT Inertial Upper Stage
mission planning
∞ missions
Solar Maximum Mission
solar probes
sun

umbilical connectors
GS connectors
. **umbilical connectors**
RT bundles
extravehicular activity
tetherlines

umbilical towers
GS towers
. **umbilical towers**
RT gantry cranes
launching pads

umbras
DEF The darkest parts of shadows in which light is completely cut off by intervening objects. Lighter parts surrounding the umbras, in which the light is only partly cut off, are called penumbras. The darker central portions of sun spots, surrounded by lighter penumbra.
RT eclipses
penumbras
shadows

Umbriel
DEF A satellite of Uranus orbiting at a mean distance of 267,000 kilometers.
GS celestial bodies
. natural satellites
. . Uranus satellites
. . . **Umbriel**
RT Uranus (planet)

Umklahr effect
DEF Due to the presence of the ozone layer, an anomaly of the relative zenith intensities of scattered sunlight at certain wavelengths in the ultraviolet as the sun approaches the horizon.
RT∞ effects
light scattering
ozonosphere
sunlight
ultraviolet radiation

Umklapp process
RT electron scattering
phonon beams
phonons
photon-electron interaction
∞ processes

uncambered wings
GS airfoils
. wings
. . uncambered wings
. . . ring wings
RT cambered wings
fixed wings
thin wings
twisted wings

unconsciousness
GS unconsciousness
. blackout (physiology)
. . blackout prevention
. narcosis
RT anesthesia
∞ coma
syncope

uncontrolled reentry (spacecraft)
DEF The descent into a denser atmosphere of a spacecraft in an elliptical orbit due to aerodynamic drag and other perturbation forces. The gradually increasing deceleration causes some kinetic energy to be converted into atmospheric heat. The centrifugal force decreases and gravity pulls the spacecraft further into the atmosphere. The spacecraft eventually burns.
GS atmospheric entry
. reentry
. . hypersonic reentry
. . . **uncontrolled reentry (spacecraft)**
. . spacecraft reentry
. . . **uncontrolled reentry (spacecraft)**
RT aerodynamic heating
Cosmos 954 satellite
descent
flight paths
plasma sheaths
spacecraft breakup
spacecraft survivability

uncoupled modes
DEF Modes of vibration that can exist in systems concurrently with and independently of other modes.
GS modes
. vibration mode
. . **uncoupled modes**
RT coupled modes
couples
modes (standing waves)

undamped oscillations
GS oscillations
. **undamped oscillations**
RT airfoil oscillations
flapping
flutter
resonant vibration
stable oscillations
wing oscillations

under surface blowing
DEF Use of jets blowing on the underside of airfoils for variations in pressure distribution.
GS blowing
. **under surface blowing**
RT aerodynamic characteristics
aircraft configurations
circulation control airfoils

lift
∞ surfaces
upper surface blowing

undercarriages
GS frames
. **undercarriages**
RT carriages
carts
chassis
dollies
landing gear
substructures
suspension systems (vehicles)

underground acoustics
DEF The sounding of subsoils, rocks, etc., for mineralogy and other exploratory purposes.
RT acoustic sounding
exploration
minerals
strata

underground communication
GS communicating
. **underground communication**
RT radio communication

underground explosions
GS explosions
. **underground explosions**
RT chemical explosions
gas explosions
mines (excavations)
nuclear explosions
seismic waves
thermonuclear explosions

underground radio antenna grid (navy)
USE **Seafarer project**

underground storage
RT decommissioning
mines (excavations)
missile storage
propellant storage
∞ storage
storage tanks
waste management

underground structures
DEF Subterranean construction of tunnels, passageways, chambers, or excavations.
RT caves
excavation
foundations
mines (excavations)
mining
passageways
tunneling (excavation)

underground transmission lines
GS transmission lines
. **underground transmission lines**
RT circuits
electric power transmission
∞ lines
power lines

underwater acoustics
UF *hydroacoustics*
underwater sound
GS acoustics
. **underwater acoustics**
RT acoustic scattering
coherent acoustic radiation
deep scattering layers
echo sounding
elastic waves
LOFAR
noise (sound)
shock waves
sonar
sonobuoys
sound fixing and ranging
sound transducers
thermoclines
ultrasonic radiation
ultrasonic wave transducers

underwater breathing apparatus
GS breathing apparatus
. **underwater breathing apparatus**
RT argon–oxygen atmospheres
bioengineering
helium–oxygen atmospheres
life support systems

underwater communication
GS telecommunication
. communication
. . **underwater communication**
RT Seafarer project
shock waves
sonar
sonobuoys
sound transducers

underwater engineering
RT breakwaters
∞ engineering
submerged bodies

underwater explosions
GS explosions
. **underwater explosions**
RT antisubmarine warfare
chemical explosions
hydroballistics
nuclear explosions
thermonuclear explosions

underwater optics
RT diffraction patterns
diffraction propagation
geometrical optics
opacity
optical density
optical paths
∞ optics
refractivity

underwater photography
GS imagery
. photography
. . **underwater photography**
RT cameras
color photography
sea water
seas
submerged bodies

underwater physiology
DEF The study of the bodily responses to the environmental stresses of the underwater milieu such as pressure, temperature and immersion effects.
GS physiology
. **underwater physiology**
RT diving (underwater)
∞ science
stress (physiology)

underwater propulsion
GS propulsion
. marine propulsion
. . **underwater propulsion**
. . . submarine propulsion
RT aeroquasic vehicles
chemical propulsion
electric propulsion
nuclear propulsion
propeller drive
torpedo engines

underwater research laboratories
GS laboratories
. **underwater research laboratories**
research vehicles
. **underwater research laboratories**
submerged bodies
. **underwater research laboratories**
water vehicles
. underwater vehicles
. . **underwater research laboratories**
RT bathymeters
ocean data acquisitions systems
oceanography

underwater resources
DEF Earth resources (minerals, petroleum, etc.) within or under the oceans.
GS resources
. Earth resources
. . **underwater resources**
RT crude oil
dredging
fossil fuels
geothermal resources
marine resources
mineral deposits
ocean bottom
oceanography
oil exploration
sea water
water resources

underwater sound
USE **underwater acoustics**

underwater structures
RT breakwaters
structural design
submerged bodies

underwater tests
GS environmental tests
. **underwater tests**
. . neutral buoyancy simulation
RT corrosion tests
diving (underwater)
water immersion

underwater to surface missiles
GS missiles
. **underwater to surface missiles**
. . Subroc missile
RT ∞ surfaces

underwater trajectories
GS trajectories
. **underwater trajectories**
RT antisubmarine warfare
hydroballistics
missile trajectories
Subroc missile
torpedoes

underwater vehicles
GS water vehicles
. **underwater vehicles**
. . submarines
. . . ballistic missile submarines
. . . guided missile submarines
. . . trident submarine

. . underwater research laboratories
RT aeroquatic vehicles
boats
∞ military vehicles
research vehicles
ships
submerged bodies
surface vehicles
∞ vehicles

uniaxial strain
USE **axial strain**

unidentified flying objects
UF *UFO*
RT ∞ aircraft
extraterrestrial intelligence
∞ spacecraft
∞ vehicles

unified field theory
DEF Any theory which attempts to express gravitational theory and electromagnetic theory within a single unified framework; usually, an attempt to generalize Einstein's general theory of gravitation alone to a theory of gravitation and classical electromagnetism.
GS field theory (physics)
. gauge theory
. . unified field theory
. . . electroweak model
. . . standard model (particle physics)
RT electromagnetic fields
electromagnetic interactions
electromagnetism
gravitation theory
gravitational fields
particle theory
plasma physics
relativity
string theory
supergravity
supersymmetry
theoretical physics

unified S band
RT Apollo spacecraft
carrier frequencies
circumlunar communication
communication equipment
differential pulse code modulation
manned space flight network
pulse code modulation
satellite communication
spacecraft communication
spacecraft tracking
superhigh frequencies
ultrahigh frequencies

uniform flow
GS fluid flow
. uniform flow
. . Blasius flow
RT aerodynamics
gas flow
heat transmission
laminar flow
liquid flow
mass flow
multiphase flow
nonuniform flow
pipe flow
pressure gradients
quasi-steady states
single-phase flow
solids flow
steady flow
steam flow
subcritical flow
turbulent flow
unsteady flow

unimolecular structures
RT molecular structure
∞ structures

unionization
RT federations
organizing
personnel
∞ unions

∞ **unions**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT Boolean algebra
unionization
unions (connectors)

unions (connectors)
GS connectors
. unions (connectors)
RT couplings
fasteners
fittings
joints (junctions)
linkages
∞ unions

uniphase flow
USE **single-phase flow**

unipolar transistors
USE **field effect transistors**

uniqueness
RT abnormalities
ill-conditioned problems (mathematics)
ill-posed problems (mathematics)
singularity (mathematics)

uniqueness theorem
GS theorems
. uniqueness theorem
RT algebra
complex variables
geometry
number theory
probability theory
real variables

United Arab Emirates
GS nations
. United Arab Emirates

United Kingdom
UF *Great Britain*
GS nations
. United Kingdom
. . England
. . Gibraltar
. . Northern Ireland
. . Scotland
. . Wales
RT English Channel
Europe
UK space program

United Kingdom satellites
USE **UK satellites**

United Nations
RT communities
developing nations
federations
international cooperation
international law
nations
organizations
politics
sea law
World Meteorological Organization

United States
UF *USA (United States)*
GS nations
. United States
. . Alabama
. . Alaska
. . Arizona
. . Arkansas
. . California
. . Colorado
. . Connecticut
. . Delaware
. . District of Columbia
. . Florida
. . Georgia
. . Guam
. . Hawaii
. . Idaho
. . Illinois
. . Indiana
. . Iowa
. . Kansas
. . Kentucky
. . Louisiana
. . Maine
. . Maryland
. . Massachusetts
. . Michigan
. . Minnesota
. . Mississippi
. . Missouri
. . Montana
. . Nebraska
. . Nevada
. . New Hampshire
. . New Jersey
. . New Mexico
. . New York
. . North Carolina
. . North Dakota
. . Ohio
. . Oklahoma
. . Oregon
. . Pennsylvania
. . Puerto Rico
. . Rhode Island
. . South Carolina
. . South Dakota
. . Tennessee
. . Texas
. . Utah
. . Vermont
. . Virgin Islands
. . Virginia
. . Washington
. . West Virginia
. . Wisconsin
. . Wyoming
RT Aleutian Islands (US)
Cascade Range (CA-OR-WA)
Central Atlantic Region (US)
Great Lakes (North America)
Great Plains Corridor (North America)
International Field Year for Great Lakes
International Hydrological Decade
Missouri River (US)
New England (US)
North America
Pacific Northwest (US)
Panama Canal Zone
Rocky Mountains (North America)

Southern California

units of measurement
DEF Precisely stated quantities in terms of which the magnitudes of other quantities of the same kind can be stated. Examples of which the magnitude of other Precisely specified quantities in te
GS **units of measurement**
. International System of Units
RT conversion tables
dimensional analysis
dimensions
∞ measurement
metrication
metrology
month
parameterization
sidereal time
symbols
time

unity
RT homogeneity
stability

Univac 1100 series computers
GS data processing equipment
. computers
. . analog computers
. . . **Univac 1100 series computers**
. . . . Univac 1105 computer
. . . . Univac 1106 computer
. . . . Univac 1107 computer
. . . . Univac 1108 computer
. . . . Univac 1110 computer
. . digital computers
. . . **Univac 1100 series computers**
. . . . Univac 1105 computer
. . . . Univac 1106 computer
. . . . Univac 1107 computer
. . . . Univac 1108 computer
. . . . Univac 1110 computer
. . Univac computers
. . . **Univac 1100 series computers**
. . . . Univac 1105 computer
. . . . Univac 1106 computer
. . . . Univac 1107 computer
. . . . Univac 1108 computer
. . . . Univac 1110 computer

Univac computers
GS data processing equipment
. computers
. . **Univac computers**
. . . Univac 1100 series computers
. . . . Univac 1105 computer
. . . . Univac 1106 computer
. . . . Univac 1107 computer
. . . . Univac 1108 computer
. . . . Univac 1110 computer
. . . Univac 80 computer
. . . Univac 418 computer
. . . Univac 490 computer
. . . Univac 494 computer
. . . Univac 1230 computer
. . . Univac Larc computer
RT digital computers

Univac 80 computer
GS data processing equipment
. computers
. . digital computers
. . . **Univac 80 computer**
. . Univac computers
. . . **Univac 80 computer**

Univac 418 computer
GS data processing equipment
. computers
. . digital computers
. . . **Univac 418 computer**
. . Univac computers
. . . **Univac 418 computer**

Univac 490 computer
GS data processing equipment
. computers
. . digital computers
. . . **Univac 490 computer**
. . Univac computers
. . . **Univac 490 computer**

Univac 494 computer
GS data processing equipment
. computers
. . digital computers
. . . **Univac 494 computer**
. . Univac computers
. . . **Univac 494 computer**

Univac 1105 computer
GS data processing equipment
. computers
. . analog computers
. . . Univac 1100 series computers
. . . . **Univac 1105 computer**
. . digital computers
. . . Univac 1100 series computers
. . . . **Univac 1105 computer**
. . Univac computers
. . . Univac 1100 series computers
. . . . **Univac 1105 computer**

Univac 1106 computer
GS data processing equipment
. computers
. . analog computers
. . . Univac 1100 series computers
. . . . **Univac 1106 computer**
. . digital computers
. . . Univac 1100 series computers
. . . . **Univac 1106 computer**
. . Univac computers
. . . Univac 1100 series computers
. . . . **Univac 1106 computer**

Univac 1107 computer
GS data processing equipment
. computers
. . analog computers
. . . Univac 1100 series computers
. . . . **Univac 1107 computer**
. . digital computers
. . . Univac 1100 series computers
. . . . **Univac 1107 computer**
. . Univac computers
. . . Univac 1100 series computers
. . . . **Univac 1107 computer**

Univac 1108 computer
GS data processing equipment
. computers
. . analog computers
. . . Univac 1100 series computers
. . . . **Univac 1108 computer**
. . digital computers
. . . Univac 1100 series computers
. . . . **Univac 1108 computer**
. . Univac computers
. . . Univac 1100 series computers
. . . . **Univac 1108 computer**

Univac 1110 computer
GS data processing equipment
. computers
. . analog computers
. . . Univac 1100 series computers
. . . . **Univac 1110 computer**
. . digital computers
. . . Univac 1100 series computers
. . . . **Univac 1110 computer**
. . Univac computers
. . . Univac 1100 series computers
. . . . **Univac 1110 computer**

Univac 1230 computer
GS data processing equipment
. computers
. . digital computers
. . . **Univac 1230 computer**
. . Univac computers
. . . **Univac 1230 computer**

Univac Larc computer
GS data processing equipment
. computers
. . digital computers
. . . **Univac Larc computer**
. . Univac computers
. . . **Univac Larc computer**

universal time
DEF Time defined by the rotational motion of the Earth and determined from the apparent diurnal motions which reflect this rotation; because of variations in the rate of rotation, universal time is not rigorously uniform. Also called Greenwich mean time.
GS time
. **universal time**
RT ephemeris time

universe
UF *metagalaxy*
RT big bang cosmology
celestial bodies
cosmology
∞ cosmos
dark matter
relic radiation

universities
UF *colleges*
RT education
instructors
learning
schools
students

university program
GS programs
. **university program**
RT bureaus (organizations)
investigation
NASA programs
teams

UNIX (operating system)
(added October 1988)
GS computer programs
. computer systems programs
. . operating systems (computers)
. . . **UNIX (operating system)**
RT computer programming
software engineering
workstations

unloading
RT ∞ discharge
disposal
dumping
ejection
emptying

evacuating (transportation)
expulsion
loading operations
materials handling
releasing
removal
spreading

unloading waves
GS elastic waves
. unloading waves

unmanned aerial vehicles
USE pilotless aircraft

unmanned spacecraft
GS unmanned spacecraft
. Echo 2 satellite
. HEAO 1
. HEAO 2
. HEAO 3
. HOTOL launch vehicle
. Pioneer Venus spacecraft
. . Pioneer Venus 1 spacecraft
. . Pioneer Venus 2 spacecraft
. . . Pioneer Venus 2 entry probes
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
. . . Pioneer Venus 2 transporter bus
. space probes
. . Explorer 18 satellite
. . Giotto mission
. . Jupiter probes
. . . Galileo probe
. . . Galileo spacecraft
. . lunar probes
. . . Lunik lunar probes
. . . . Lunik 2 lunar probe
. . . . Lunik 3 lunar probe
. . . . Lunik 9 lunar probe
. . . . Lunik 10 lunar probe
. . . . Lunik 11 lunar probe
. . . . Lunik 12 lunar probe
. . . . Lunik 13 lunar probe
. . . . Lunik 14 lunar probe
. . . . Lunik 16 lunar probe
. . . . Lunik 17 lunar probe
. . . . Lunik 19 lunar probe
. . . . Lunik 20 lunar probe
. . . . Lunik 22 lunar probe
. . . Ranger lunar probes
. . . . Ranger 1 lunar probe
. . . . Ranger 2 lunar probe
. . . . Ranger 3 lunar probe
. . . . Ranger 4 lunar probe
. . . . Ranger 5 lunar probe
. . . . Ranger 6 lunar probe
. . . . Ranger 7 lunar probe
. . . . Ranger 8 lunar probe
. . . . Ranger 9 lunar probe
. . . . Ranger lunar landing vehicles
. . . Surveyor lunar probes
. . . . Surveyor 1 lunar probe
. . . . Surveyor 2 lunar probe
. . . . Surveyor 3 lunar probe
. . . . Surveyor 4 lunar probe
. . . . Surveyor 5 lunar probe
. . . . Surveyor 6 lunar probe
. . . . Surveyor 7 lunar probe
. . Mariner space probes
. . . Mariner 1 space probe
. . . Mariner 2 space probe
. . . Mariner 3 space probe
. . . Mariner 4 space probe
. . . Mariner 5 space probe
. . . Mariner 6 space probe
. . . Mariner 7 space probe
. . . Mariner 8 space probe
. . . Mariner 9 space probe
. . . Mariner 10 space probe
. . . Mariner 11 space probe
. . . Mariner R 2 space probe
. . Mariner spacecraft
. . . Mariner C spacecraft
. . . Mariner Venus 67 spacecraft
. . Mars probes
. . . Advanced Reconn Electric Spacecraft
. . . Mariner 3 space probe
. . . Mariner 4 space probe
. . . Mariner 6 space probe
. . . Mariner 7 space probe
. . . Mariner 8 space probe
. . . Mariner 9 space probe
. . . Mars 1 spacecraft
. . . Mars 2 spacecraft
. . . Mars 3 spacecraft
. . . Mars 4 Spacecraft
. . . Mars 5 spacecraft
. . . Mars 6 spacecraft
. . . Mars 7 spacecraft
. . . Mars Observer
. . . Mars Pathfinder
. . . Viking 1975 entry vehicle
. . . Viking spacecraft
. . . . Viking 1 spacecraft
. . . . . Viking lander 1
. . . . . Viking orbiter 1
. . . . Viking 2 spacecraft
. . . . . Viking lander 2
. . . . . Viking orbiter 2
. . . . Viking lander spacecraft
. . . . . Viking lander 1
. . . . . Viking lander 2
. . . . Viking orbiter spacecraft
. . . . . Viking orbiter 1
. . . . . Viking orbiter 2
. . . . . Viking orbiter 1975
. . . Zond 2 space probe
. . Pioneer space probes
. . . Pioneer 1 space probe
. . . Pioneer 2 space probe
. . . Pioneer 3 space probe
. . . Pioneer 4 space probe
. . . Pioneer 5 space probe
. . . Pioneer 6 space probe
. . . Pioneer 7 space probe
. . . Pioneer 8 space probe
. . . Pioneer 9 space probe
. . . Pioneer 10 space probe
. . . Pioneer 11 space probe
. . . Pioneer Venus 2 entry probes
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
. . solar probes
. . . Helios 1
. . . Helios 2
. . . Helios A
. . . Helios B
. . . Starprobe spacecraft
. . . Sunblazer space probe
. . Venus probes
. . . Magellan spacecraft (NASA)
. . . Mariner 1 space probe
. . . Mariner 2 space probe
. . . Mariner 5 space probe
. . . Mariner 10 space probe
. . . Pioneer Venus 2 spacecraft
. . . . Pioneer Venus 2 entry probes
. . . . . Pioneer Venus 2 night probe
. . . . . Pioneer Venus 2 sounder probe
. . . . Pioneer Venus 2 transporter bus
. . . Venera satellites
. . . . Venera 2 satellite
. . . . Venera 3 satellite
. . . . Venera 4 satellite
. . . . Venera 5 satellite
. . . . Venera 6 satellite
. . . . Venera 7 satellite
. . . . Venera 8 satellite
. . . . Venera 9 satellite
. . . . Venera 10 satellite
. . . . Venera 11 satellite
. . . . Venera 12 satellite
. . . Zond 1 space probe
. . . Zond 3 space probe
. . . Zond 4 space probe
. . . Zond 5 space probe
. . . Zond 6 space probe
. . . Zond 7 space probe
. . . Zond 8 space probe
. . Huygens probe
. . Voyager 1 spacecraft
. . Voyager 2 spacecraft
. technology feasibility spacecraft
. Zond space probes
. . Zond 1 space probe
. . Zond 2 space probe
. . Zond 3 space probe
. . Zond 4 space probe
. . Zond 5 space probe
. . Zond 6 space probe
. . Zond 7 space probe
. . Zond 8 space probe
RT artificial satellites
communication satellites
geophysical satellites
gravity gradient satellites
inflatable spacecraft
interplanetary spacecraft
lunar landing modules
lunar satellites
lunar spacecraft
manned spacecraft
Mariner program
meteorological satellites
military spacecraft
reconnaissance spacecraft
recoverable spacecraft
rendezvous spacecraft
reusable spacecraft
SIRS B satellite
space capsules
∞ spacecraft
Voyager project

unsaturation (chemistry)
DEF A state in which the atomic bonds of an organic compound's chain or ring are not completely satisfied (not saturated); unsaturation usually results in a double bond (as for olefins) or a triple bond (as for the acetylens).
RT chemical bonds
∞ chemistry
precipitation (chemistry)
∞ saturation
saturation (chemistry)

unsteady aerodynamics
GS fluid mechanics
. fluid dynamics
. . gas dynamics
. . . aerodynamics
. . . . unsteady aerodynamics
RT aerodynamic characteristics
aerodynamic forces
aerodynamic stability
aeroelasticity
aeroservoelasticity
flutter

flutter analysis
unsteady flow
wing oscillations

unsteady flow
UF *pulsating flow*
GS fluid flow
. **unsteady flow**
. . oscillating flow
RT aerodynamics
critical flow
∞ flow
flow stability
flow velocity
gas flow
heat transmission
hydrodynamic coefficients
laminar flow
liquid flow
mass flow
method of characteristics
multiphase flow
nonequilibrium flow
nonNewtonian flow
nonuniform flow
orifice flow
pipe flow
pressure gradients
single-phase flow
solids flow
steady flow
steady state
steam flow
Strouhal number
subcritical flow
supercritical flow
turbulence
uniform flow
unsteady aerodynamics

unsteady state
RT ∞ equilibrium
fluid dynamics
metastable state
nonequilibrium conditions
stability
steady state
systems stability
thermodynamics

unstructured grids (mathematics)
(added May 1995)
GS coordinates
. computational grids
. . **unstructured grids (mathematics)**
RT computational fluid dynamics
finite element method
finite volume method
grid generation (mathematics)
multigrid methods
structured grids (mathematics)

unswept wings
GS airfoils
. wings
. . **unswept wings**
. . . infinite span wings
. . . rectangular wings
. . . ring wings
RT fixed wings
swept wings
wing planforms

up-converters
DEF Parametric amplifiers characterized by the output signal frequencies being greater than the frequencies of the input signals.
GS frequency converters
. **up-converters**
RT ∞ converters
parametric frequency converters
transformers

updrafts
USE **vertical air currents**

upgrading
RT beneficiation
concentrating
enrichment
experience
improvement
promotion
public relations
purification
quality
refining

uplinking
DEF The transmission of signals from ground terminals to satellites in telecommunication systems.
RT carrier to noise ratios
communication satellites
downlinking
frequency reuse
microwave transmission
satellite transmission
transmission efficiency

upper air
USE **upper atmosphere**

upper atmosphere
DEF The general term applied to the atmosphere above the troposphere. Used for upper air.
UF *upper air*
GS Earth atmosphere
. **upper atmosphere**
. . Earth ionosphere
. . . E region
. . . . E-1 layer
. . . . E-2 layer
. . . . sporadic E layer
. . . lower ionosphere
. . . . D region
. . . upper ionosphere
. . . . F region
. . . . . F 1 region
. . . . . F 2 region
. . exosphere
. . thermosphere
. . . turbopause
RT acoustic sounding
aeronomy
chemosphere
field aligned currents
heterosphere
high altitude
homosphere
meteor trails
meteorological balloons
middle atmosphere
ozonosphere
plasmasphere
proton precipitation
radiation belts
satellite atmospheres
Upper Atmosphere Research Satellite (UARS)

Upper Atmosphere Research Satellite (UARS)
(added August 1989)
UF *UARS (satellite)*
GS artificial satellites
. scientific satellites
. . **Upper Atmosphere Research Satellite (UARS)**
RT upper atmosphere

upper ionosphere
GS Earth atmosphere
. upper atmosphere
. . Earth ionosphere
. . . **upper ionosphere**
. . . . F region
. . . . . F 1 region
. . . . . F 2 region
RT E region

upper stage rocket engines
GS engines
. rocket engines
. . **upper stage rocket engines**
RT Inertial Upper Stage
multistage rocket vehicles
spacecraft configurations
spinning solid upper stage
stage separation

upper surface blowing
DEF Use of jet blowing on the upper surface of airfoils to create variations in pressure distribution.
GS blowing
. **upper surface blowing**
RT aerodynamic characteristics
aircraft configurations
circulation control airfoils
lift
∞ surfaces
under surface blowing

upper surface blown flaps
GS airfoils
. flaps (control surfaces)
. . externally blown flaps
. . . **upper surface blown flaps**
control surfaces
. flaps (control surfaces)
. . externally blown flaps
. . . **upper surface blown flaps**
RT aircraft stability
blowing
boundary layer control
lift augmentation
lift devices
∞ surfaces

Upper Volta
USE **Burkina**

upsetting
RT cold pressing
cold working
forming techniques
hot isostatic pressing
hot pressing
hot working
pressing (forming)
stamping

upstream
RT air currents
water currents
wind direction

upwash
RT downwash
∞ draft
interference drag
interference lift

upwelling
USE **upwelling water**

upwelling water
DEF The process by which water rises from a deeper to a shallower depth. Used for upwelling.
UF *upwelling*
RT atmospheric circulation
coasts
ocean currents
wind (meteorology)
wind direction

upwind schemes (mathematics)
(added July 1992)
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . upwind schemes (mathematics)
RT computational fluid dynamics
Euler equations of motion
finite difference theory

uracil
GS bases (chemical)
. uracil
nitrogen compounds
. uracil
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . pyrimidines
. . . . uracil
RT alloxan
uridylic acid

uranium
GS chemical elements
. actinide series
. . uranium
. . . uranium isotopes
. . . . uranium 232
. . . . uranium 233
. . . . uranium 234
. . . . uranium 235
. . . . uranium 238
metals
. actinide series
. . uranium
. . . uranium isotopes
. . . . uranium 232
. . . . uranium 233
. . . . uranium 234
. . . . uranium 235
. . . . uranium 238
RT fissionable materials
jet membrane process
nuclear fuels
uranium plasmas

uranium 232
GS chemical elements
. actinide series
. . uranium
. . . uranium isotopes
. . . . uranium 232
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . uranium 232
. . . uranium isotopes
. . . . uranium 232
metals
. actinide series
. . uranium
. . . uranium isotopes
. . . . uranium 232

uranium 233
GS chemical elements
. actinide series
. . uranium
. . . uranium isotopes
. . . . uranium 233
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . uranium 233
. . . uranium isotopes
. . . . uranium 233
metals
. actinide series
. . uranium
. . . uranium isotopes
. . . . uranium 233
RT nuclear fuels

uranium 234
GS chemical elements
. actinide series
. . uranium
. . . uranium isotopes
. . . . uranium 234
. nuclides
. . isotopes
. . . uranium isotopes
. . . . uranium 234
metals
. actinide series
. . uranium
. . . uranium isotopes
. . . . uranium 234

uranium 235
GS chemical elements
. actinide series
. . uranium
. . . uranium isotopes
. . . . uranium 235
. nuclides
. . isotopes
. . . uranium isotopes
. . . . uranium 235
metals
. actinide series
. . uranium
. . . uranium isotopes
. . . . uranium 235
RT nuclear fuels

uranium 238
GS chemical elements
. actinide series
. . uranium
. . . uranium isotopes
. . . . uranium 238
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . uranium 238
. . . uranium isotopes
. . . . uranium 238
metals
. actinide series
. . uranium
. . . uranium isotopes
. . . . uranium 238
RT nuclear fuels

uranium alloys
GS alloys
. uranium alloys
RT nuclear fuel elements
nuclear fuels

uranium carbides
GS actinide series compounds
. uranium compounds
. . uranium carbides
carbon compounds
. carbides
. . uranium carbides
RT ceramic nuclear fuels
nuclear fuel elements
nuclear fuels

uranium compounds
GS actinide series compounds
. uranium compounds
. . uranium carbides
. . uranium fluorides
. . uranium oxides
RT ceramic nuclear fuels
∞ chemical compounds
∞ metal compounds
nuclear fuels

uranium fluorides
GS actinide series compounds
. uranium compounds
. . uranium fluorides
halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . uranium fluorides
. halides
. . fluorides
. . . metal fluorides
. . . . uranium fluorides
. . metal halides
. . . metal fluorides
. . . . uranium fluorides

uranium isotopes
GS chemical elements
. actinide series
. . uranium
. . . uranium isotopes
. . . . uranium 232
. . . . uranium 233
. . . . uranium 234
. . . . uranium 235
. . . . uranium 238
. nuclides
. . isotopes
. . . uranium isotopes
. . . . uranium 232
. . . . uranium 233
. . . . uranium 234
. . . . uranium 235
. . . . uranium 238
metals
. actinide series
. . uranium
. . . uranium isotopes
. . . . uranium 232
. . . . uranium 233
. . . . uranium 234
. . . . uranium 235
. . . . uranium 238

uranium oxides
GS actinide series compounds
. uranium compounds
. . uranium oxides
chalcogenides
. oxides
. . metal oxides
. . . uranium oxides
RT ceramic nuclear fuels
mixed oxides

nuclear fuels

uranium plasmas
GS metals
. uranium plasmas
particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . metallic plasmas
. . . . . uranium plasmas
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . metallic plasmas
. . . . . uranium plasmas
RT magnetohydrodynamics
plasma composition
plasma physics
radioactive materials
uranium

Uranus (planet)
GS celestial bodies
. planets
. . gas giant planets
. . . Uranus (planet)
RT Ariel
Cordelia
Miranda
Oberon
Puck
Titania
Umbriel
Uranus atmosphere
Uranus rings
Voyager 2 spacecraft

Uranus atmosphere
DEF The atmosphere of the planet Uranus.
GS environments
. extraterrestrial environments
. . planetary environments
. . . planetary atmospheres
. . . . Uranus atmosphere
RT aerospace environments
∞ atmospheres
gas giant planets
hydrogen
methane
planetary ionospheres
Uranus (planet)

Uranus rings
DEF Ring structures encircling the planet Uranus and similar to those of the planet Saturn.
GS celestial bodies
. planetary rings
. . Uranus rings
RT Jupiter rings
moonlets
natural satellites
planetary structure
∞ rings
Saturn rings
Uranus (planet)

Uranus satellites
GS celestial bodies
. natural satellites
. . Uranus satellites
. . . Ariel
. . . Cordelia
. . . Miranda
. . . Oberon
. . . Puck
. . . Titania
. . . Umbriel

urban areas
USE cities

urban development
RT cities
communities
∞ development
economic development
industrial areas
land use
megalopolises
operations research
parks
planning
∞ plans
regional planning
residential areas
resources
Starsite program
technologies

urban planning
GS planning
. regional planning
. . urban planning
RT census
cities
communities
heat islands
highways
land management
land use
parks
public health
recreation
social factors
sociology
Starsite program
streets

urban research
RT cities
communities
land use
recreation
social factors
streets

urban transportation
GS transportation
. urban transportation
RT automated guideway transit vehicles
automated mixed traffic vehicles
automated transit vehicles
industrial areas
megalopolises
rail transportation
rapid transit systems
regional planning
surface vehicles

urease
GS nitrogen compounds
. amides
. . urease
. . . difluorourea
. . . thioureas
. . . thiuronium
RT diuretics
fertilizers
urine

ureilites
(added December 1988)
GS celestial bodies
. meteorites
. . stony meteorites
. . . achondrites
. . . . ureilites
. . . carbonaceous meteorites
. . . . ureilites
RT meteoritic diamonds

urethanes
GS esters
. Carbamates (tradename)
. . urethanes
poisons
. pesticides
. . insecticides
. . . Carbamates (tradename)
. . . . urethanes
RT cyanates

uric acid
GS acids
. uric acid
fungicides
. xanthines
. . uric acid
nitrogen compounds
. xanthines
. . uric acid
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . purines
. . . . xanthines
. . . . . uric acid
RT alloxan

uridylic acid
GS acids
. uridylic acid
organic compounds
. nucleotides
. . uridylic acid
. organic phosphorus compounds
. . uridylic acid
phosphorus compounds
. organic phosphorus compounds
. . uridylic acid
. phosphates
. . uridylic acid
RT amino acids
nucleic acids
uracil

urinalysis
GS chemical tests
. chemical analysis
. . urinalysis
RT diabetes mellitus
physiological tests
urine

urination
UF micturition
RT diuresis
urine
water balance

urine
GS body fluids
. urine
wastes
. liquid wastes
. . urine
. metabolic wastes
. . human wastes
. . . urine
RT antidiuretics
creatinine
excretion
feces
hematuria

kidneys
urea
urinalysis
urination

urography
GS imagery
. photography
. . urography
. radiography
. . urography
RT black and white photography

urolithiasis
GS diseases
. urolithiasis
RT calculi
kidneys
urology

urology
GS medical science
. urology
RT bladder
genitourinary system
kidneys
urolithiasis

Uruguay
GS nations
. Uruguay
RT South America

US–2A aircraft
USE **S–2 aircraft**

USA (United States)
USE **United States**

user manuals (computer programs)
GS documents
. handbooks
. . user manuals (computer programs)
. manuals
. . user manuals (computer programs)
RT computer programs
programs
report generators
∞ routines
subroutines

user requirements
GS requirements
. user requirements
RT commerce lab
human–computer interface
international cooperation
specifications

user–computer interface
USE **human–computer interface**

USNS Kingsport
USE **satellite communications ships**

Utah
GS nations
. United States
. . Utah
RT Colorado Plateau (US)
Colorado River (North America)
Great Basin (US)
Great Salt Lake (UT)

uterus
GS anatomy
. genitourinary system
. . reproductive systems
. . . uterus

utilities
RT ∞ electric equipment
∞ electric power
garbage
industries
integrated energy systems
logistics
Modular Integrated Utility System
services
site selection
telephones
waste disposal
water

utility aircraft
GS utility aircraft
. BO–105 helicopter
. DHC 4 aircraft
. DHC 5 aircraft
. HH–43 helicopter
. S–2 aircraft
. Saab 105 aircraft
. T–39 aircraft
. U–2 aircraft
. U–10 aircraft
. UH–1 helicopter
. UH–2 helicopter
. UH–60A helicopter
. UH–61A helicopter
. XV–8A aircraft
. Z–37 aircraft
RT ∞ aircraft
biplanes
cargo aircraft
commercial aircraft
general aviation aircraft
helicopters
light aircraft
∞ military aircraft
observation aircraft
reconnaissance aircraft
∞ subsonic aircraft
transport aircraft
V/STOL aircraft
water takeoff and landing aircraft

utilization
UF *application*
GS utilization
. coal utilization
. geothermal energy utilization
. laser applications
. . laser ablation
. . laser annealing
. . laser cooling
. . laser cutting
. . laser deposition
. . . pulsed laser deposition
. . laser drilling
. . laser fusion
. . laser guidance
. . laser guide stars
. . laser heating
. . laser induced fluorescence
. . laser interferometry
. . laser machining
. . laser microscopy
. . laser power beaming
. . laser propulsion
. . laser spectroscopy
. . . optogalvanic spectroscopy
. . laser weapons
. . laser welding
reuse
. . software reuse
. technology utilization
. waste energy utilization
. waste utilization
. windpower utilization
RT consumption
depletion
efficiency

utricle
RT plants (botany)
seeds

UV Ceti stars
USE **flare stars**

UV lasers
USE **ultraviolet lasers**

Uzbekistan
(added August 1993)
GS nations
. Uzbekistan
RT Asia

V

V band
USE **extremely high frequencies**

V grooves
GS grooves
. V grooves
. . riblets
RT machining
micromachining
notches

V-1 missile
GS missiles
. surface to surface missiles
. . V-1 missile
RT liquid propellant rocket engines
pulsejet engines

V-2 missile
GS missiles
. ballistic missiles
. . V-2 missile
RT liquid propellant rocket engines

V-3 aircraft
USE **XV-3 aircraft**

V-4 aircraft
USE **XV-4 aircraft**

V-5 aircraft
USE **XV-5 aircraft**

V-9 aircraft
USE **XV-9A aircraft**

V-22 aircraft
(added September 1990)
DEF A Bell/Boeing developed tilt rotor aircraft, nicknamed "Osprey", and designed for light multiservice use. Used for Osprey aircraft.
UF *Osprey aircraft*
GS Bell aircraft
. V-22 aircraft
Boeing aircraft
. V-22 aircraft
V/STOL aircraft
. rotary wing aircraft
. . tilt rotor aircraft
. . . V-22 aircraft
RT ∞ aircraft
helicopters
∞ military aircraft
rotary wings
Tilt Rotor Research Aircraft Program
tilt wing aircraft
tilting rotors

V/STOL aircraft
DEF A hybrid form of heavier-than-air aircraft that is capable, by virtue of one or more horizontal rotors or units acting as rotors, of taking off, hovering, and landing as, or in a fashion similar to, a helicopter, and once aloft, and moving forward, capable, by means of a mechanical conversion of one sort or another, of flying as a fixed-wing aircraft, especially in its higher speed ranges. Used for convertaplanes and steep gradient aircraft.
UF *convertaplanes*
steep gradient aircraft
GS V/STOL aircraft
. CL-84 aircraft
. DO-31 aircraft
. FV-12A aircraft
. G-95/4 aircraft
. G-222 aircraft
. L-29 jet trainer
. P-1127 aircraft
. P-1154 aircraft
. rotary wing aircraft
. . autogyros
. . . Avian 2/180 autogiro
. . helicopters
. . . Alouette helicopters
. . . . SA-330 helicopter
. . . . SE-3160 helicopter
. . . Bell 214A helicopter
. . . compound helicopters
. . . . S-67 helicopter
. . . H-17 helicopter
. . . heavy lift helicopters
. . . . CH-62 helicopter
. . . light helicopters
. . . . OH-4 helicopter
. . . . OH-5 helicopter
. . . . OH-6 helicopter
. . . . OH-58 helicopter
. . . military helicopters
. . . . AH-1G helicopter
. . . . AH-1S helicopter
. . . . AH-1W helicopter
. . . . AH-63 helicopter
. . . . AH-64 helicopter
. . . . BO-105 helicopter
. . . . CH-3 helicopter
. . . . CH-21 helicopter
. . . . CH-34 helicopter
. . . . CH-46 helicopter
. . . . CH-47 helicopter
. . . . CH-54 helicopter
. . . . CH-62 helicopter
. . . . H-19 helicopter
. . . . H-43 helicopter
. . . . H-53 helicopter
. . . . H-54 helicopter
. . . . H-56 helicopter
. . . . H-60 Helicopter
. . . . HC-3 helicopter
. . . . HH-43 helicopter
. . . . HH-65 helicopter
. . . . OH-4 helicopter
. . . . OH-5 helicopter
. . . . OH-6 helicopter
. . . . OH-13 helicopter
. . . . OH-23 helicopter
. . . . OH-58 helicopter
. . . . P-531 helicopter
. . . . QH-50 helicopter
. . . . S-67 helicopter
. . . . SA-321 helicopter
. . . . SA-330 helicopter
. . . . SH-3 helicopter
. . . . SH-4 helicopter
. . . . Sikorsky Whirlwind helicopter
. . . . UH-1 helicopter
. . . . UH-2 helicopter
. . . . UH-34 helicopter
. . . . UH-60A helicopter
. . . . UH-61A helicopter
. . . . Westland Whirlwind helicopter
. . . . XV-9A aircraft
. . . rigid rotor helicopters
. . . . CH-3 helicopter
. . . . F-28 helicopter
. . . . XH-51 helicopter
. . . S-58 helicopter
. . . S-61 helicopter
. . . tandem rotor helicopters
. . . . CH-46 helicopter
. . . . CH-47 helicopter
. . . . H-25 helicopter
. . . EH-101 helicopter
. . . TH-55 helicopter
. . rotor systems research aircraft
. . tilt rotor aircraft
. . . V-22 aircraft
. . . XV-15 aircraft
. short takeoff aircraft
. . Aladin 2 aircraft
. . Breguet 940 aircraft
. . Breguet 941 aircraft
. . C-6A augmentor wing aircraft
. . C-15 aircraft
. . C-123 aircraft
. . DHC 4 aircraft
. . DHC 5 aircraft
. . Questol aircraft
. . U-10 aircraft
. vertical takeoff aircraft
. . flying platforms
. . SC-1 aircraft
. . VJ-101 aircraft
. . VZ-8 aircraft
. . X-13 aircraft
. . X-14 aircraft
. . X-19 aircraft
. . X-22 aircraft
. . X-22A aircraft
. . XC-142 aircraft
. . XV-4 aircraft
. . XV-11A aircraft
. VZ-2 aircraft
. XV-3 aircraft
. XV-5 aircraft
. XV-9A aircraft
RT ∞ aircraft
antisubmarine warfare aircraft
attack aircraft
commercial aircraft
convertible fan-shaft engines
drone aircraft
fan in wing aircraft
fighter aircraft
ground effect machines
heliports
hovering
jet aircraft
∞ military aircraft
passenger aircraft
reconnaissance aircraft
research aircraft
short haul aircraft
STOVL aircraft
tilt wing aircraft
transition flight
transport aircraft
utility aircraft
vertical flight
Weser aircraft
Westland aircraft

vacancies (crystal defects)
DEF Vacant sites in a crystal structure due to the absence of an atom or ion from its normal structural position.
GS defects
. crystal defects
. . point defects
. . . vacancies (crystal defects)
. . . . Frenkel defects
RT antisite defects

binding energy
holes (electron deficiencies)
square wells

vaccines
GS vaccines
. inoculum
RT acquired immunodeficiency syndrome
antibodies
antigens
antiserums
bacteriology
biocompatibility
diseases
drugs
epidemiology
human immunodeficiency virus
inoculation
toxicology
toxins and antitoxins

vacillation
RT dithers
human reactions

vacuum
DEF A given space filled with gas at pressures below atmospheric pressure. Used for aspiration.
UF aspiration
GS pressure
. vacuum
. . high vacuum
. . low vacuum
. . ultrahigh vacuum
RT aerospace environments
boundary layer control
evacuating (vacuum)
getters
high pressure
Knudsen flow
low pressure
mean free path
offgassing
outgassing
pressure measurement
rarefaction
suction

vacuum apparatus
GS vacuum apparatus
. vacuum chambers
. vacuum furnaces
. vacuum gages
. . ionization gages
. . . alphatrons
. . . Bayard–Alpert ionization gages
. . . Penning gages
. . . Philips ionization gages
. . Knudsen gages
. . Mcleod gages
. . Pirani gages
. vacuum pumps
. . condensation pumps
. . ion pumps
. . molecular pumps
RT cold traps
diffusion pumps
high vacuum
low density research
residual gas
suction
ultrahigh vacuum
vacuum arc switches

vacuum arc switches
GS switches
. electric switches
. . vacuum arc switches
RT airborne equipment
switching circuits
vacuum apparatus
vacuum effects

vacuum chambers
UF low pressure chambers
GS compartments
. test chambers
. . pressure chambers
. . . vacuum chambers
vacuum apparatus
. vacuum chambers
RT altitude simulation
∞ chambers
high altitude environments
high altitude pressure
hyperbaric chambers
pressure
space environment simulation
space simulators
thermal vacuum tests
wind tunnel drives

vacuum deposition
GS deposition
. vapor deposition
. . vacuum deposition
RT ceramic coatings
diamond films
electroless deposition
ion plating

vacuum effects
RT cold welding
∞ effects
environments
offgassing
pressure effects
space manufacturing
vacuum arc switches

vacuum furnaces
GS heating equipment
. furnaces
. . vacuum furnaces
vacuum apparatus
. vacuum furnaces
RT solar furnaces

vacuum gages
GS measuring instruments
. pressure gages
. . vacuum gages
. . . ionization gages
. . . . alphatrons
. . . . Bayard–Alpert ionization gages
. . . . Penning gages
. . . . Philips ionization gages
. . . Knudsen gages
. . . Mcleod gages
. . . Pirani gages
vacuum apparatus
. vacuum gages
. . ionization gages
. . . alphatrons
. . . Bayard–Alpert ionization gages
. . . Penning gages
. . . Philips ionization gages
. . Knudsen gages
. . Mcleod gages
. . Pirani gages
RT barometers
manometers
orbitrons
pressure measurement

vacuum melting
GS phase transformations
. melting
. . vacuum melting
RT arc melting
induction heating
levitation
powder metallurgy
zone melting

vacuum pumps
GS pumps
. vacuum pumps
. . condensation pumps
. . ion pumps
. . molecular pumps
vacuum apparatus
. vacuum pumps
. . condensation pumps
. . ion pumps
. . molecular pumps
RT compressors
cryopumping
diffusion pumps
ejectors
evacuating (vacuum)
jet pumps
materials handling
outgassing
suction

vacuum spectroscopy
GS spectroscopy
. vacuum spectroscopy
RT gas spectroscopy
infrared spectroscopy
magnetic spectroscopy
mass spectroscopy
molecular spectroscopy
nuclear radiation spectroscopy
spectroscopic analysis
ultraviolet spectroscopy
x ray spectroscopy

vacuum systems
DEF Chambers having walls capable of withstanding atmospheric pressure and having an opening through which the gas can be removed through a pipe or manifold to a pumping system. The pumping system may or may not be considered as part of the vacuum system.
RT ampoules
∞ systems

vacuum tests
GS vacuum tests
. thermal vacuum tests
RT high vacuum
hypobaric atmospheres
test chambers
∞ tests
ultrahigh vacuum

vacuum tube oscillators
GS electron tubes
. vacuum tubes
. . vacuum tube oscillators
oscillators
. vacuum tube oscillators
RT autodynes
frequency modulation photomultipliers
microwave oscillators

vacuum tubes
DEF Electron tubes evacuated to such a degree that their electrical characteristics are

essentially unaffected by the presence of residual gas or vapor.
GS electron tubes
. vacuum tubes
. . cathode ray tubes
. . . monoscopes
. . . picture tubes
. . cesium diodes
. . microwave tubes
. . . celescopes
. . . cyclotron resonance devices
. . . klystrons
. . . magnetrons
. . . . nigotrons
. . . planotrons
. . . traveling wave tubes
. . . . backward wave tubes
. . . . . helitrons
. . . . carcinotrons
. . vacuum tube oscillators
RT pentodes
pervesnce
residual gas

vacuum ultraviolet radiation
USE far ultraviolet radiation

vadose water
GS water
. vadose water
RT coastal water
evapotranspiration
Lake Texoma (OK–TX)
nearshore water
river basins
soils
water tables

valence
DEF numbers representing the combining or displacing power of an atom, number of electrons lost, gained or shared by an atom in a compound, number of hydrogen atoms with which an atom will combine, or which it will displace. The valence of an element is the ratio of the atomic weight to the equivalent weight.
GS valence
. octets
RT chemical bonds
conduction electrons
ion charge
ions
positive ions
quantum wells
trivalent ions

valeric acid
GS acids
. carboxylic acids
. . fatty acids
. . . valeric acid
organic compounds
. carboxylic acids
. . fatty acids
. . . valeric acid

Valiant aircraft
UF *Vickers Valiant aircraft*
GS attack aircraft
. bomber aircraft
. . Valiant aircraft
BAC aircraft
. Valiant aircraft
jet aircraft
. Valiant aircraft
monoplanes
. Valiant aircraft
RT∞ aircraft
reconnaissance aircraft
tanker aircraft

validation
USE proving

validity
RT acceptability
accuracy
adequacy
consistency
correlation
existence
mathematical models
precision
quality
reliability
simulation
standards
statistical tests
variability

Valkyrie aircraft
USE B–70 aircraft

valleys
UF *intermontane floors*
rift valleys
rifts
GS valleys
. Coachella Valley (CA)
. Death Valley (CA)
. Imperial Valley (CA)
. Magdalena–Cauca Valley (Colombia)
. Palo Verde Valley (CA)
. Potomac River Valley (MD–VA–WV)
. Sacramento Valley (CA)
. San Joaquin Valley (CA)
. Shenandoah Valley (VA)
. St Lawrence Valley (North America)
. Tennessee Valley (AL–KY–TN)
RT canyons
Delaware River Basin (US)
erosion
meanders
Missouri River (US)
ravines
rivers
structural basins
Susquehanna River Basin (MD–NY–PA)
topography
wadis
watersheds

Valsalva exercise
DEF The procedure of raising the pressure in the nasopharynx by forcible expiration with the mouth closed and nostrils pinched, in order to clear the eustachian tubes. Used for valsalva maneuver.
UF *Valsalva maneuver*
RT respiration

Valsalva maneuver
USE Valsalva exercise

value
GS value
. Q values (nuclear physics)
RT amount
assessments
costs
damage assessment
estimates
estimating
evaluation
figure of merit
level (quantity)
norms
ranking
technology assessment

value engineering
RT concurrent engineering
cost analysis
cost estimates
cost incentives
cost reduction
design analysis
economic analysis
∞ engineering
incentive techniques
life cycle costs
management planning
quality control
reliability engineering
standards
total quality management

valves
UF *hydraulic valves*
GS valves
. automatic control valves
. . pressure regulators
. . relief valves
. butterfly valves
. . dampers (valves)
. cocks
. control valves
. fuel valves
. gas valves
. heart valves
. . artificial heart valves
. solenoid valves
RT balls
chokes (restrictions)
closures
diverters
engine parts
hydraulic equipment
packings (seals)
pneumatic circuits
pneumatic equipment
seals (stoppers)
traps
water hammer

Vampire aircraft
USE DH 115 aircraft

Vampire Mk 35 aircraft
GS attack aircraft
. fighter aircraft
. . Vampire Mk 35 aircraft
Hawker Siddeley aircraft
. Vampire Mk 35 aircraft
jet aircraft
. Vampire Mk 35 aircraft
single engine aircraft
. Vampire Mk 35 aircraft
RT∞ aircraft
bomber aircraft
Harrier aircraft

Van Allen radiation belts
USE radiation belts

Van Biesbroeck star
GS celestial bodies
. stars
. . late stars
. . . cool stars
. . . . M stars

. . . . . Van Bleasbrouck eter

Van de Graaff accelerators
DEF Electrostatic machines in which an electrical charge is carried into the high voltage terminal by a belt made of insulating materials moving at high speed. The particles are then accelerated along a discharge path through a vacuum tube by the potential difference between the insulated terminal and the grounded end of the accelerator.
GS particle accelerators
. Van de Graaff accelerators
RT∞ accelerators
electron accelerators

Van der Waals forces
RT dipole moments
∞ forces
interatomic forces
intermolecular forces

Van Slyke method
GS chemical tests
. chemical analysis
. . gas analysis
. . . Van Slyke method
. . quantitative analysis
. . . Van Slyke method
RT∞ methodology

vanadates
GS vanadium compounds
. vanadates
. . calcium vanadates
RT metal oxides
vanadium oxides

vanadium
GS chemical elements
. vanadium
. . vanadium isotopes
metals
. transition metals
. . vanadium
. . . vanadium isotopes
RT vanadium alloys

vanadium alloys
GS alloys
. vanadium alloys
RT aluminum alloys
microstructure
titanium alloys
vanadium

vanadium carbides
GS carbon compounds
. carbides
. . vanadium carbides
vanadium compounds
. vanadium carbides

vanadium compounds
GS vanadium compounds
. vanadates
. . calcium vanadates
. vanadium carbides
. vanadium oxides
. vanadyl compounds
RT∞ chemical compounds
Group 5B compounds
∞ metal compounds

vanadium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . vanadium isotopes
. vanadium
. . vanadium isotopes
metals
. transition metals
. . vanadium
. . . vanadium isotopes

vanadium oxides
GS chalcogenides
. oxides
. . metal oxides
. . . vanadium oxides
vanadium compounds
. vanadium oxides
RT vanadates

vanadyl compounds
GS vanadium compounds
. vanadyl compounds
RT∞ chemical compounds
∞ metal compounds

vanadyl radical
GS ions
. molecular ions
. . vanadyl radical
. positive ions
. . cations
. . . vanadyl radical
radicals
. vanadyl radical

vaneless diffusers
RT compressors
∞ diffusers
exhaust diffusers
pumps
supersonic diffusers

vanes
GS vanes
. guide vanes
. . jet vanes
. wind vanes
RT airfoils
∞ blades
compressor blades
control surfaces
fins
impellers
nose fins
stator blades
tail assemblies
turbomachine blades
windpower utilization
windpowered generators
windpowered pumps

Vanguard 1 satellite
GS artificial satellites
. geodetic satellites
. . Vanguard 1 satellite
. Vanguard satellites
. . Vanguard 1 satellite

vanguard 2 launch vehicle
GS launch vehicles
. vanguard 2 launch vehicle
rocket vehicles
. multistage rocket vehicles
. . vanguard 2 launch vehicle
RT liquid propellant rocket engines
solid propellant rocket engines
Viking rocket vehicle
X-248 engine

Vanguard 2 satellite
GS artificial satellites
. meteorological satellites
. . Vanguard 2 satellite
. Vanguard satellites
. . Vanguard 2 satellite

Vanguard 3 satellite
GS artificial satellites
. geophysical satellites
. . Vanguard 3 satellite
. Vanguard satellites
. . Vanguard 3 satellite

Vanguard project
GS programs
. NASA programs
. . NASA space programs
. . . Vanguard project
. projects
. . Vanguard project
. space programs
. . NASA space programs
. . . Vanguard project
RT X-405 engine

Vanguard satellites
GS artificial satellites
. Vanguard satellites
. . Vanguard 1 satellite
. . Vanguard 2 satellite
. . Vanguard 3 satellite
RT geodetic satellites
geophysical satellites
International Geophysical Year
meteorological satellites

vans
USE trucks

vapor barrier clothing
DEF Impermeable garments used with respirators as life support systems in toxic environments (caustic chemicals, etc.).
GS clothing
. protective clothing
. . vapor barrier clothing
RT∞ barriers
life support systems
textiles

vapor deposition
UF *chemical vapor deposition*
CVD (deposition)
GS deposition
. vapor deposition
. . metalorganic chemical vapor deposition
. . vacuum deposition
RT atomic layer epitaxy
coating
coatings
crystal growth
diamond films
electroless deposition
laser deposition
metal vapors
metallizing
pulsed laser deposition
ultrapure metals
vaporizers
vaporizing

vapor generators
USE vaporizers

vapor jets
GS fluid jets
. vapor jets
RT air jets
gas flow
jet flow

plasma jets

vapor liquid equilibrium
USE **liquid–vapor equilibrium**

vapor phase epitaxy
DEF A crystal growth process whereby an element or a compound is deposited as a thin layer on a slice of substrate single crystal material by the vapor phase technique.
GS growth
. crystal growth
. . epitaxy
. . . **vapor phase epitaxy**
RT atomic layer epitaxy
crystal structure
liquid phase epitaxy
liquid phases

vapor phase lubrication
(added August 1996)
DEF The use of an organic liquid that is vaporized into a flowing air stream directed to sliding surfaces where lubrication is needed. The organic vapor reacts at the concentrated contact sliding area generating a lubricous deposit. This deposit has been characterized as a thin polymeric film that can provide effective lubrication temperatures greater than 400 degrees Celsius.
GS lubrication
. **vapor phase lubrication**
RT boundary lubrication
lubrication systems
∞ sliding contact
squeeze films
tribology

vapor phases
UF *gas phases*
RT association reactions
critical pressure
gases
gas–metal interactions
gas–solid interfaces
hydrogen clouds
liquid phases
liquid–gas mixtures
liquids
liquid–vapor interfaces
metal–gas systems
phase diagrams
∞ phases
prevaporization
solids
supercritical pressures
vapors
volatility

vapor pressure
DEF The pressure exerted by the molecules of a given vapor. For a pure confined vapor, it is that vapor's pressure on the walls of its containing vessel; and for a vapor mixed with other vapors or gases, it is that vapor's contribution to the total pressure (i.e., its partial pressure).
GS pressure
. **vapor pressure**
thermodynamic properties
. thermophysical properties
. . **vapor pressure**
RT Dalton law
flash point
fuel tank pressurization
Henry law
humidity
interfacial tension
liquid–gas mixtures
liquid–vapor interfaces
partial pressure
Raoult law
sublimation
supercritical pressures
volatility

vapor trails
USE **contrails**

vapor traps
GS traps
. **vapor traps**
RT cold traps
getters
ion traps (instrumentation)

vaporization heat
USE **heat of vaporization**

vaporizers
UF *vapor generators*
GS heating equipment
. **vaporizers**
. . evaporators
RT boilers
cavity vapor generators
colloidal generators
columns (process engineering)
condensers (liquefiers)
gas generators
∞ generators
∞ heaters
separators
sprayers
vapor deposition
vaporizing
vapors

vaporizing
UF *volatilization*
GS phase transformations
. **vaporizing**
. . boiling
. . . film boiling
. . . nucleate boiling
. . . . Leidenfrost phenomenon
. . evaporation
. . . evapotranspiration
. . . propellant evaporation
. . . transpiration
. . flashing (vaporizing)
. . prevaporization
. . sublimation
RT ablation
concentrating
desalinization
distillation
evolution (liberation)
gasification
heat of vaporization
heating
∞ separation
spraying
stripping (distillation)
surface reactions
vapor deposition
vaporizers
vapors
volatility

vapors
DEF Gases whose temperatures are below their critical temperatures, so that they can be condensed to the liquid or solid state by increase of pressure alone.
GS **vapors**
. cesium vapor
. metal vapors
. . mercury vapor
. . sodium vapor
. water vapor
RT cavity vapor generators
combustion products
condensates
exhaust gases
fumes
gases
haze detection
hydrogen clouds
liquid–vapor equilibrium
prevaporization
smoke
vapor phases
vaporizers
vaporizing

varactor diode circuits
GS circuits
. **varactor diode circuits**
RT diodes

varactor diodes
UF *varactors*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **varactor diodes**
. solid state devices
. . semiconductor devices
. . . **varactor diodes**
RT junction diodes
parametric diodes
varistors

varactors
USE **varactor diodes**

variability
RT consistency
continuity
convergence
correlation
covariance
∞ dispersion
eccentricity
∞ equilibrium
factor analysis
heterogeneity
linearity
nonlinearity
periodic variations
quality
quality control
range (extremes)
regression analysis
reliability
sampling
stability
standard deviation
standardization
validity
∞ variable
variance (statistics)

∞ **variable**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *factors*
RT complex variables
dependent variables
form factors
independent variables
Latin square method
race factors
random variables

real variables
social factors
variability

variable amplitude loading
(added September 1983)
GS loads (forces)
. dynamic loads
. . variable amplitude loading
RT cyclic loads
load tests
∞ loading
loading rate
random loads
stress cycles

variable area wings
USE trailing edge flaps

variable cycle engines
UF *VCE*
GS engines
. aircraft engines
. . variable cycle engines
RT coaxial nozzles
convertible fan–shaft engines
supersonic aircraft
variable stream control engines

variable geometry structures
RT expandable structures
folding structures
inflatable structures
mission adaptive wings
∞ structures

variable lift
USE lift

variable mass systems
GS kinetics
. variable mass systems
RT equations of motion
∞ mass balance
mass distribution
∞ systems

variable pitch propellers
UF *constant speed propellers*
GS propellers
. variable pitch propellers
RT helicopter propeller drive
pitch (inclination)

variable stars
GS celestial bodies
. stars
. . variable stars
. . . cataclysmic variables
. . . cepheid variables
. . . flare stars
. . . irregular variable stars
. . . . R Coronae Borealis stars
. . . Lambda Tauri stars
. . . Mira variables
. . . . Omicron Ceti star
. . . novae
. . . . dwarf novae
. . . . Hercules nova
. . . semiregular variable stars
. . . supernovae
. . . . supernova 1987A
. . . symbiotic stars
. . . T Tauri stars
RT binary stars
companion stars
eclipsing binary stars
periodic variations
solar oscillations
stellar mass
stellar mass ejection
stellar oscillations

variable stream control engines
DEF Advanced, moderate bypass–ratio turbofan configurations that use duct burner thrust augmentation and coannular nozzles for jet noise reduction.
GS engines
. aircraft engines
. . variable stream control engines
RT ∞ control
engine control
supersonic aircraft
supersonic nozzles
variable cycle engines

variable sweep wings
UF *M wings*
ogee wings
W wings
GS airfoils
. wings
. . variable sweep wings
planforms
. wing planforms
. . variable sweep wings
RT arrow wings
Boeing 733 aircraft
delta wings
F–111 aircraft
folding structures
mission adaptive wings
ogee shape
swept forward wings
sweptback wings

variable thrust
GS thrust
. variable thrust
RT control rockets
high thrust
jet control
jet thrust
low thrust
low thrust propulsion
microthrust
rocket thrust
throttling
thrust augmentation
thrust control
thrust termination
thrust vector control

∞ **variance**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF A measure of the precision of a measurement based on summing the squares of the deviations from individual determinations from the average and dividing by the degrees of freedom.
RT analysis of variance
degrees of freedom
multivariate statistical analysis
variance (statistics)

variance (statistics)
GS statistical analysis
. variance (statistics)
. . analysis of variance
. . multivariate statistical analysis
. . . bivariate analysis
. . . covariance
. . . orthogonality
. . . regression analysis
. . . . regression coefficients
RT confidence limits
correlation
Cramer–Rao bounds
distribution moments
experiment design
factor analysis
Gauss–Markov theorem
goodness of fit
heterogeneity
homogeneity
lurging
mean
moments
quality control
range (extremes)
standard deviation
variability
∞ variance

variation method
USE calculus of variations

variational principles
RT calculus of variations
∞ dynamics
equilibrium methods
irreversible processes
Onsager phenomenological coefficient
Rayleigh–Ritz method

variations
UF fluctuation
GS variations
. magnetic variations
. . geomagnetic pulsations
. . . geomagnetic micropulsations
. . nocturnal variations
. periodic variations
. . alternations
. . annual variations
. . diurnal variations
. . nocturnal variations
. . secular variations
. twenty–seven day variation
. wind variations
RT alternatives
asymmetry
deflection
deviation
differences
displacement
distortion
divergence
eccentricity
gradients
micropulsations
perturbation
revisions
substitutes
surges

variometers
DEF Instruments for comparing magnetic forces, especially of the Earth's magnetic field. Used for magnetovariographs.
UF *magnetovariographs*
GS measuring instruments
. magnetometers
. . variometers
RT geomagnetism

varistors
DEF Two electrode semiconductor devices having a voltage dependent nonlinear resistance.
GS electronic equipment
. solid state devices
. . semiconductor devices

. . . varistors
RT resistors
thermistors
varactor diodes

varnishes
RT fillers
finishes
paints
primers (coatings)
protective coatings
sealers
sprayed coatings

vascular system
USE **cardiovascular system**

vasoconstriction
RT blood vessels
body temperature
cold tolerance
ischemia
reflexes
sneezing

vasoconstrictor drugs
UF *pressors*
GS drugs
. **vasoconstrictor drugs**
. . hypertensin
. . serotonin
RT pharmacology

vasodilation
RT blood vessels
body temperature
congestion
reflexes

vasomotor nervous system
USE **nervous system**

Vatican City
GS cities
. . Vatican City
nations
. **Vatican City**
RT Europe
Italy

VATOL aircraft
SN (VERTICAL ATTITUDE TAKEOFF AND LANDING AIRCRAFT)
DEF Vertical attitude takeoff and landing aircraft. Used for vertical attitude takeoff-landing aircraft and XBQM-180A aircraft.
UF *vertical attitude takeoff-landing aircraft*
XBQM-180A aircraft
RT aircraft
delta wings
remotely piloted vehicles
vertical landing
vertical takeoff aircraft

VAX computers
GS data processing equipment
. computers
. . digital computers
. . . **VAX computers**
. . . . VAX-11 series computers
. . . . . VAX-11/780 computer

VAX-11 series computers
GS data processing equipment
. computers
. . digital computers
. . . VAX computers
. . . . **VAX-11 series computers**
. . . . . VAX-11/780 computer

VAX-11/780 computer
GS data processing equipment
. computers
. . digital computers
. . . VAX computers
. . . . VAX-11 series computers
. . . . . **VAX-11/780 computer**

VC-10 aircraft
UF *Vickers 1100 aircraft*
Vickers VC-10 aircraft
GS BAC aircraft
. **VC-10 aircraft**
commercial aircraft
. **VC-10 aircraft**
jet aircraft
. **VC-10 aircraft**
monoplanes
. **VC-10 aircraft**
passenger aircraft
. **VC-10 aircraft**
transport aircraft
. **VC-10 aircraft**
RT aircraft
cargo aircraft

VCE
USE **variable cycle engines**

VCO
USE **voltage controlled oscillators**

vector analysis
GS analysis (mathematics)
. calculus
. . **vector analysis**
. . . collinearity
. . . coplanarity
. . . curl (vectors)
. . . . vorticity
. real variables
. . **vector analysis**
. . . collinearity
. . . coplanarity
. . . curl (vectors)
. . . . vorticity
geometry
. **vector analysis**
. . collinearity
. . coplanarity
. . curl (vectors)
. . . vorticity
RT differential equations
Euler-Cauchy equations
flux vector splitting
gradients
Poynting theorem
resultants
stability derivatives

vector calculus
USE **vector spaces**

vector control
USE **directional control**

vector currents
RT current algebra
parity
radioactive decay
superconductivity

vector dominance model
GS models
. **vector dominance model**
RT hadrons
high energy interactions
nucleons
photoneutrons
photoproduction

vector mesons
GS particles
. elementary particles
. . bosons
. . . mesons
. . . . **vector mesons**
. . . . . rho-mesons
. . . . . sigma-mesons
. . hadrons
. . . mesons
. . . . **vector mesons**
. . . . . rho-mesons
. . . . . sigma-mesons
. nuclear particles
. . bosons
. . . mesons
. . . . **vector mesons**
. . . . . rho-mesons
. . . . . sigma-mesons

vector processing (computers)
(added July 1989)
GS data processing
. **vector processing (computers)**
RT multiprocessing (computers)
parallel processing (computers)
pipelining (computers)

vector quantization
(added June 1989)
RT coding
data compression
digital techniques
image processing
vectors (mathematics)
voice data processing

vector spaces
UF *Grassmann algebra*
vector calculus
GS algebra
. **vector spaces**
. . Banach space
. . . Hilbert space
. . . . Sobolev space
. . matrices (mathematics)
. . . adjoints
. . . canonical forms
. . . eigenvalues
. . . eigenvectors
. . . Hessian matrices
. . . Jordan form
. . . stiffness matrix
. . Stokes theorem (vector calculus)
. . U spin space
. . vectors (mathematics)
. . . eigenvectors
. . . state vectors
. . . vorticity
RT analysis (mathematics)
Chaplygin equation
Hermitian polynomial
hodographs
Kakutani theorem
linear transformations

vectorcardiography
GS bioengineering
. biometrics
. . cardiography
. . . **vectorcardiography**
RT electrocardiography
phonocardiography

vectors (mathematics)
DEF Quantities such as force, velocity, or acceleration, which have both magnitude and direction at each point in space, as opposed to scalar which has magnitude only. Such quantities may be represented geometrically by an arrow of length proportional to its magnitude, pointing in the assigned direction.
GS algebra
. vector spaces
. . vectors (mathematics)
. . . eigenvectors
. . . state vectors
. . . vorticity
RT dyadics
flux vector splitting
function space
Schwartz inequality
vector quantization

Vega launch vehicle
UF *Vega rocket vehicle*
GS launch vehicles
. Vega launch vehicle
rocket vehicles
. multistage rocket vehicles
. . Vega launch vehicle
RT Atlas D ICBM
liquid propellant rocket engines

Vega project
RT flyby missions
Halley's comet
international cooperation
U.S.S.R. space program
Venera satellites
Venus (planet)

Vega rocket vehicle
USE Vega launch vehicle

Vegard–Kaplan bands
GS spectra
. spectral bands
. . Vegard–Kaplan bands
RT ∞ bands
emission spectra
molecular spectra
nitrogen

vegetables
GS vegetables
. potatoes
. spinach
RT angiosperms
∞ food
leguminous plants
planting
seeds

vegetation
GS vegetation
. canopies (vegetation)
RT bioconversion
biomass energy production
Earth resources
locusts
oases
plants (botany)
rain forests
resources
sea grasses
trees (plants)

vegetation growth
GS growth
. vegetation growth
. . crop growth
RT agriculture
biochemistry
botany
crop vigor
ecology
fertilizers
gravitropism
hydroponics
irrigation
plant roots
plant stress
soil moisture
soil science
soils
vegetative index

vegetative index
DEF Linear combinations of spectral band responses in digital count, reflectance factor, or voltage to determine the vigor, greenness and/or biomass of the vegetation. Observations can be made by satelliteborne, aircraftborne, truck mounted, or hand held spectrometers.
GS ratios
. indexes (ratios)
. . vegetative index
. . . leaf area index
RT AgRISTARS project
atmospheric attenuation
atmospheric effects
atmospheric optics
atmospheric scattering
canopies (vegetation)
color
correction
crop identification
crop inventories
geographic distribution
image enhancement
imaging techniques
multispectral band scanners
radiometric correction
reflectance
remote sensing
satellite imagery
satellite observation
spectral reflectance
vegetation growth

vehicle wheels
GS wheels
. vehicle wheels
. . nose wheels
RT aircraft tires
brakes (for arresting motion)
landing gear
mechanical drives
rollers
shafts (machine elements)
suspension systems (vehicles)
tires
toroidal wheels
transmissions (machine elements)
wheel brakes

∞ **vehicles**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *craft*
rotating vehicles
RT amphibious vehicles
Arcas rocket vehicles
Arcon rocket vehicle
Argo rocket vehicles
Astrobee rocket vehicles
Atlas Agena launch vehicles
Atlas launch vehicles
automated guideway transit vehicles
automated mixed traffic vehicles
Automated Transfer Vehicle
automated transit vehicles
automobiles
∞ ballistic vehicles
boostglide vehicles
captured air bubble vehicles
control configured vehicles
crawler tractors
drone vehicles
electric hybrid vehicles
electric motor vehicles
engines
Europa launch vehicles
flight test vehicles
∞ flight vehicles
ground effect machines
heavy lift launch vehicles
HOTOL launch vehicle
hovering rocket vehicles
hydroplanes (vehicles)
hypersonic vehicles
intraorbit transfer vehicles
Juno launch vehicles
Kappa rocket vehicles
Lambda rocket vehicles
launch vehicles
low observable reentry vehicles
lunar flying vehicles
lunar roving vehicles
lunar surface vehicles
Lunokhod lunar roving vehicles
magnetic levitation vehicles
manned lunar surface vehicles
Marsokhod Mars roving vehicles
∞ military vehicles
missiles
motor vehicles
multiengine vehicles
multistage rocket vehicles
Nike rocket vehicles
Nike–Hydac rocket vehicle
Nike–Iroquois rocket vehicle
Nova launch vehicles
nuclear engine for rocket vehicles
orbit transfer vehicles
Ranger lunar landing vehicles
recoverable launch vehicles
recovery vehicles
reentry vehicles
remotely piloted vehicles
research vehicles
reusable launch vehicles
rocket vehicles
roving vehicles
Saturn launch vehicles
single stage rocket vehicles
single stage to orbit vehicles
Skua rocket vehicles
∞ spacecraft
Standard Launch Vehicles
surface effect ships
surface vehicles
SWATH (ship)
tanks (combat vehicles)
Terminal Configured Vehicle Program
test vehicles
Thor launch vehicles
Thorad launch vehicles
Titan 4 launch vehicle
Titan launch vehicles
tracked vehicles
tractors
∞ transport vehicles

transporter
underwater vehicles
unidentified flying objects
Veronique rocket vehicles
water vehicles
∞ winged vehicles

vehicular tracks
RT idlers
surface vehicles
suspension systems (vehicles)
tracked vehicles
∞ tracks
treads

veins
GS anatomy
. circulatory system
. . cardiovascular system
. . . blood vessels
. . . . **veins**
RT arteries
bifurcation (biology)
transfusion

Vela satellites
GS artificial satellites
. **Vela satellites**
military spacecraft
. **Vela satellites**
RT Fishbowl Operation
high altitude nuclear detection
high altitude tests
nuclear explosions
nuclear radiation
post-blast nuclear radiation
radiation detectors
radiation measuring instruments
satellite observation

velarfenite
USE **gehlenite**

velocity
DEF Rate of motion. Rate of motion in a straight line is called linear speed, whereas change of direction per unit time is called angular speed. Used for speed.
UF *speed*
GS **velocity**
. acoustic velocity
. airspeed
. angular velocity
. critical velocity
. escape velocity
. exhaust velocity
. flow velocity
. . solar wind velocity
. ground speed
. group velocity
. high speed
. hypersonic speed
. landing speed
. light speed
. low speed
. orbital velocity
. phase velocity
. propagation velocity
. radial velocity
. relativistic velocity
. rotor speed
. solar velocity
. subsonic speed
. supersonic speed
. terminal velocity
. tip speed
. transonic speed
. wind velocity
. . solar wind velocity
. impact velocity
RT acceleration (physics)
body kinematics
de Broglie wavelengths
∞ dynamics
Fermat principle
kinematics
kinetics
loading rate
∞ motion
perceptual time constant
pressure measurement
relativistic effects
solitary waves
time measurement

velocity coupling
DEF The response of the burning propellant surface to the local velocity which would include both mean flow as well as acoustic velocity (both being parallel to the burning surface).
RT burning rate
combustion stability
coupling
propellant combustion

velocity distribution
UF *velocity fields*
velocity profiles
GS distribution (property)
. **velocity distribution**
RT circulation distribution
flow distribution
flow velocity
galactic rotation
Orr-Sommerfeld equations
Pohlhausen method
pressure distribution
shock wave profiles
three dimensional boundary layer

velocity errors
GS errors
. **velocity errors**
RT escape velocity
orbital velocity
position errors

velocity fields
USE **velocity distribution**

velocity measurement
UF *anemometry*
GS mechanical measurement
. **velocity measurement**
. . particle image velocimetry
. . wind velocity measurement
RT acceleration measurement
accelerometers
anemometers
drag force anemometers
flow measurement
flow velocity
flowmeters
hot-film anemometers
hot-wire anemometers
Hubble constant
Hubble diagram
laser anemometers
laser doppler velocimeters
∞ measurement
pitot tubes
pressure measurement
radial velocity
solar wind velocity
sonic anemometers
speed indicators
stroboscopes
tachometers
time measurement
Venturi tubes
vortex precession

velocity modulation
GS modulation
. **velocity modulation**
RT bunching
cavity resonators
electron bunching
electron tubes

velocity profiles
USE **velocity distribution**

veneers
RT coatings
finishes
laminates
masonry

Venera satellites
GS artificial satellites
. Soviet satellites
. . **Venera satellites**
. . . Venera 2 satellite
. . . Venera 3 satellite
. . . Venera 4 satellite
. . . Venera 5 satellite
. . . Venera 6 satellite
. . . Venera 7 satellite
. . . Venera 8 satellite
. . . Venera 9 satellite
. . . Venera 10 satellite
. . . Venera 11 satellite
. . . Venera 12 satellite
interplanetary spacecraft
. Venus probes
. . **Venera satellites**
. . . Venera 2 satellite
. . . Venera 3 satellite
. . . Venera 4 satellite
. . . Venera 5 satellite
. . . Venera 6 satellite
. . . Venera 7 satellite
. . . Venera 8 satellite
. . . Venera 9 satellite
. . . Venera 10 satellite
. . . Venera 11 satellite
. . . Venera 12 satellite
Soviet spacecraft
. **Venera satellites**
. . Venera 2 satellite
. . Venera 3 satellite
. . Venera 4 satellite
. . Venera 5 satellite
. . Venera 6 satellite
. . Venera 7 satellite
. . Venera 8 satellite
. . Venera 9 satellite
. . Venera 10 satellite
. . Venera 11 satellite
. . Venera 12 satellite
unmanned spacecraft
. space probes
. . Venus probes
. . . **Venera satellites**
. . . . Venera 2 satellite
. . . . Venera 3 satellite
. . . . Venera 4 satellite
. . . . Venera 5 satellite
. . . . Venera 6 satellite
. . . . Venera 7 satellite
. . . . Venera 8 satellite
. . . . Venera 9 satellite

. . . . Venera 10 satellite
. . . . Venera 11 satellite
. . . . Venera 12 satellite
RT U.S.S.R. space program
Vega project

Venera 2 satellite
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . Venera 2 satellite
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . Venera 2 satellite
Soviet spacecraft
. Venera satellites
. . Venera 2 satellite
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . Venera 2 satellite

Venera 3 satellite
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . Venera 3 satellite
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . Venera 3 satellite
Soviet spacecraft
. Venera satellites
. . Venera 3 satellite
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . Venera 3 satellite

Venera 4 satellite
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . Venera 4 satellite
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . Venera 4 satellite
Soviet spacecraft
. Venera satellites
. . Venera 4 satellite
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . Venera 4 satellite

Venera 5 satellite
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . Venera 5 satellite
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . Venera 5 satellite
Soviet spacecraft
. Venera satellites
. . Venera 5 satellite
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . Venera 5 satellite

Venera 6 satellite
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . Venera 6 satellite
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . Venera 6 satellite
Soviet spacecraft
. Venera satellites
. . Venera 6 satellite
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . Venera 6 satellite

Venera 7 satellite
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . Venera 7 satellite
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . Venera 7 satellite
Soviet spacecraft
. Venera satellites
. . Venera 7 satellite
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . Venera 7 satellite

Venera 8 satellite
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . Venera 8 satellite
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . Venera 8 satellite
Soviet spacecraft
. Venera satellites
. . Venera 8 satellite
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . Venera 8 satellite
RT U.S.S.R. space program
Venus (planet)

Venera 9 satellite
DEF One in a series of Soviet Spacecraft to probe the environment near and on the planet Venus.
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . Venera 9 satellite
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . Venera 9 satellite
Soviet spacecraft
. Venera satellites
. . Venera 9 satellite
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . Venera 9 satellite

Venera 10 satellite
DEF One in a series of Soviet spacecraft to probe the environment near and on the planet Venus.
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . Venera 10 satellite
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . Venera 10 satellite
Soviet spacecraft
. Venera satellites
. . Venera 10 satellite
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . Venera 10 satellite
RT U.S.S.R. space program
Venus (planet)

Venera 11 satellite
DEF One in a series of Soviet spacecraft to probe the environment near and on the planet Venus.
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . Venera 11 satellite
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . Venera 11 satellite
Soviet spacecraft
. Venera satellites
. . Venera 11 satellite
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . Venera 11 satellite
RT U.S.S.R. space program
Venus (planet)
Venus atmosphere
Venus surface

Venera 12 satellite
DEF One in a series of Soviet spacecraft to probe the environment near and on the planet Venus.
GS artificial satellites
. Soviet satellites
. . Venera satellites
. . . Venera 12 satellite
interplanetary spacecraft
. Venus probes
. . Venera satellites
. . . Venera 12 satellite
Soviet spacecraft
. Venera satellites
. . Venera 12 satellite
unmanned spacecraft
. space probes
. . Venus probes
. . . Venera satellites
. . . . Venera 12 satellite
RT U.S.S.R. space program
Venus (planet)
Venus atmosphere
Venus surface

Venezlano model
GS models
. mathematical models

. . **Venezziano model**
RT elementary particle interactions

Venezuela
GS nations
. **Venezuela**
RT South America

Venn diagrams
GS diagrams
. **Venn diagrams**
RT analysis (mathematics)
geometry
mathematical logic

Venom aircraft
USE **DH 112 aircraft**

ventilation
RT air conditioning
air cooling
air filters
air flow
air intakes
air purification
blowers
comfort
cooling
cooling systems
draft (gas flow)
ducts
environmental engineering
exhaust systems
exhausting
life support systems
refrigerating
temperature
temperature control
temperature distribution
ventilators
venting
vents

ventilation fans
RT blowers
cooling
cooling systems
ducted fans
fan blades
∞ fans
ventilators

ventilators
RT air ducts
air intakes
blowers
∞ diffusers
exhaust systems
ventilation
ventilation fans
vents

venting
RT breathing vibration
cooling
∞ discharge
evacuating (vacuum)
exhausting
flushing
purging
releasing
relief valves
∞ separation
ventilation
vents

ventral sections
RT abdomen

vents
GS outlets
. **vents**
RT annular ducts
apertures
cavities
chimneys
cooling systems
ducts
evacuating (vacuum)
exhaust systems
flues
gates (openings)
louvers
∞ nozzles
openings
ports (openings)
relief valves
slotted wind tunnels
ventilation
ventilators
venting
windows (apertures)

Venturi tubes
DEF Short tubes of smaller diameter in the middle than at the ends. When fluids flow through such tubes, the pressure decreases as the diameters become smaller, the amount of decrease being proportional to the speed of flow and the amount of restriction.
RT ∞ detectors
flow measurement
flowmeters
gas meters
measuring instruments
orifices
pitot tubes
pressure gradients
pressure measurement
∞ tubes
velocity measurement

Venus (planet)
GS celestial bodies
. planets
. . terrestrial planets
. . . **Venus (planet)**
RT planetary craters
Vega project
Venera 8 satellite
Venera 10 satellite
Venera 11 satellite
Venera 12 satellite

Venus atmosphere
GS environments
. extraterrestrial environments
. . planetary environments
. . . planetary atmospheres
. . . . **Venus atmosphere**
. . . . . Venus clouds
RT aerospace environments
ionopause
planetary ionospheres
planetary meteorology
Venera 11 satellite
Venera 12 satellite
Venus orbiting imaging radar (spacecraft)

Venus clouds
GS environments
. extraterrestrial environments
. . planetary environments
. . . planetary atmospheres
. . . . Venus atmosphere
. . . . . **Venus clouds**
RT atmospheric models
cloud cover
cloud physics
∞ clouds
greenhouse effect

Venus fly trap rocket vehicle
GS rocket vehicles
. sounding rockets
. . **Venus fly trap rocket vehicle**
RT cosmic dust
extraterrestrial matter

Venus orbiting imaging radar (spacecraft)
DEF A spacecraft also known as VOIR whose mission is to obtain synthetic aperture radar (SAR) images of at least 70% of the surface of Venus as well as information on the gravity field of the planet, nature of its inertial composition and dynamics of its atmosphere and interaction with the solar wind.
GS radar
. **Venus orbiting imaging radar (spacecraft)**
RT Magellan project (NASA)
Magellan spacecraft (NASA)
synthetic aperture radar
Venus atmosphere
Venus probes
Venus surface

Venus probes
GS interplanetary spacecraft
. **Venus probes**
. . Magellan spacecraft (NASA)
. . Mariner 1 space probe
. . Mariner 2 space probe
. . Mariner 5 space probe
. . Mariner 10 space probe
. . Pioneer Venus 2 spacecraft
. . . Pioneer Venus 2 entry probes
. . . . Pioneer Venus 2 night probe
. . . . Pioneer Venus 2 sounder probe
. . . Pioneer Venus 2 transporter bus
. . Venera satellites
. . . Venera 2 satellite
. . . Venera 3 satellite
. . . Venera 4 satellite
. . . Venera 5 satellite
. . . Venera 6 satellite
. . . Venera 7 satellite
. . . Venera 8 satellite
. . . Venera 9 satellite
. . . Venera 10 satellite
. . . Venera 11 satellite
. . . Venera 12 satellite
. . Zond 1 space probe
. . Zond 3 space probe
. . Zond 4 space probe
. . Zond 5 space probe
. . Zond 6 space probe
. . Zond 7 space probe
. . Zond 8 space probe
unmanned spacecraft
. space probes
. . **Venus probes**
. . . Magellan spacecraft (NASA)
. . . Mariner 1 space probe
. . . Mariner 2 space probe
. . . Mariner 5 space probe
. . . Mariner 10 space probe
. . . Pioneer Venus 2 spacecraft
. . . . Pioneer Venus 2 entry probes
. . . . . Pioneer Venus 2 night probe
. . . . . Pioneer Venus 2 sounder probe
. . . . Pioneer Venus 2 transporter bus

. . . Venera satellites
. . . . Venera 2 satellite
. . . . Venera 3 satellite
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. . . . Venera 7 satellite
. . . . Venera 8 satellite
. . . . Venera 9 satellite
. . . . Venera 10 satellite
. . . . Venera 11 satellite
. . . . Venera 12 satellite
. . . Zond 1 space probe
. . . Zond 3 space probe
. . . Zond 4 space probe
. . . Zond 5 space probe
. . . Zond 6 space probe
. . . Zond 7 space probe
. . . Zond 8 space probe
RT Magellan project (NASA)
Mariner program
Mariner Venus 67 spacecraft
Mars probes
outer planets explorers
Sputnik 5 satellite
Venus orbiting imaging radar (spacecraft)
Voyager project

Venus radar echoes
GS echoes
. radar echoes
. . Venus radar echoes

Venus Radar Mapper
USE Magellan spacecraft (NASA)

Venus Radar Mapper Project
USE Magellan project (NASA)

Venus surface
DEF The surface features and/or composition of the planet Venus.
GS planetary surfaces
. Venus surface
RT cloud cover
extraterrestrial environments
Magellan project (NASA)
Magellan spacecraft (NASA)
planetary craters
solar system
∞ surfaces
terraforming
topography
Venera 11 satellite
Venera 12 satellite
Venus orbiting imaging radar (spacecraft)

verbal communication
GS communicating
. verbal communication
. . conversation
RT acoustics
languages
lectures
phonetics
telephony
voice communication
voice data processing
words (language)

verification (proving)
USE proving

vermiculite
DEF An aggregate used in lightweight insulating concrete, formed by heating and expanding a micaceous mineral.
GS clays
. vermiculite
minerals
. vermiculite
RT insulation
mica
packaging
silicates

Vermont
GS nations
. United States
. . Vermont
RT Lake Champlain Basin (NY–VT)
St Lawrence Valley (North America)

Verneuil process
DEF Method of single–crystal growth in which powder is dropped through an oxy–hydrogen flame, falling molten on crystal seed.
GS growth
. crystal growth
. . Verneuil process
RT Czochralski method
ruby lasers

Vernier engines
DEF Rocket engines of small thrust used primarily to obtain a fine adjustment in the velocity and trajectory of a rocket vehicle just after the thrust cutoff of the last sustainer engine, and used secondarily to add thrust to a booster or sustainer engine.
GS engines
. rocket engines
. . Vernier engines
. . . control rockets
. . . SYNCOM apogee engines
. torpedo engines
. . Vernier engines
. . . control rockets
. . . SYNCOM apogee engines
RT electric rocket engines
electrostatic engines
hybrid propellant rocket engines
internal combustion engines
launch vehicles
liquid propellant rocket engines
MA-2 engine
MA-3 engine
MA-5 engine
microrocket engines
restartable rocket engines
solid propellant rocket engines
thrust vector control

vernine
USE guanosines

Veronique rocket vehicles
GS rocket vehicles
. single stage rocket vehicles
. . Veronique rocket vehicles
. sounding rockets
. . Veronique rocket vehicles
RT liquid propellant rocket engines
∞ vehicles

versatility
RT compatibility
flexibility

vertebrae
GS anatomy
. musculoskeletal system
. . bones
. . . spine
. . . . vertebrae
RT intervertebral disks
neck (anatomy)

vertebral column
USE spine

vertebrates
GS animals
. vertebrates
. . amphibia
. . . frogs
. . birds
. . . chickens
. . . pigeons
. . . turkeys
. . . waterfowl
. . fishes
. . . schools (fish)
. . . sharks
. . mammals
. . . bats
. . . bears
. . . cats
. . . cattle
. . . . calves
. . . deer
. . . . caribous
. . . dogs
. . . goats
. . . horses
. . . marine mammals
. . . . dolphins
. . . . manatees
. . . . porpoises
. . . . seals (animals)
. . . . whales
. . . moles
. . . primates
. . . . apes
. . . . . chimpanzees
. . . . baboons
. . . . human beings
. . . . monkeys
. . . rodents
. . . . guinea pigs
. . . . hamsters
. . . . mice
. . . . . jerboas
. . . . . pocket mice
. . . . rabbits
. . . . rats
. . . . squirrels
. . . . . ground squirrels
. . . sheep
. . . swine
. . . wolves
. . reptiles
. . . lizards
. . . snakes
. . . turtles
RT homeotherms

vertical air currents
UF *updrafts*
GS fluid flow
. gas flow
. . air flow
. . . air currents
. . . . vertical air currents
RT atmospheric circulation
convection clouds
convection currents
downbursts

lee waves
microbursts (meteorology)
mixing height
soaring
turbulence
wind (meteorology)
winds aloft

vertical attitude takeoff–landing aircraft
USE **VATOL aircraft**

vertical distribution
GS distribution (property)
. spatial distribution
. . **vertical distribution**
. . . **star distribution**
RT electron distribution
horizontal distribution
ion distribution
pressure distribution
radiation distribution
temperature distribution
wind profiles

vertical fins
USE **fins**

vertical flight
RT balloon flight
climbing flight
∞ flight
flight paths
hovering
rocket flight
transition flight
V/STOL aircraft

vertical junction solar cells
DEF Solar cells made from wafers on which narrow grooves are formed using a preferential KOH etch. The grooved region is radiation tolerant.
GS electric generators
. direct power generators
. . photoelectric generators
. . . photovoltaic cells
. . . . solar cells
. . . . . **vertical junction solar cells**
. solar generators
. . solar cells
. . . **vertical junction solar cells**
electronic equipment
. solid state devices
. . semiconductor devices
. . . photovoltaic cells
. . . . solar cells
. . . . . **vertical junction solar cells**
photoelectric cells
. photovoltaic cells
. . solar cells
. . . **vertical junction solar cells**
RT wafers

vertical landing
UF *vertical takeoff and landing*
VTOL
GS landing
. **vertical landing**
RT aircraft landing
spacecraft landing
STOVL aircraft
touchdown
VATOL aircraft

vertical motion
RT falling
∞ motion
touchdown

vertical motion simulators
DEF Vibration machines which produce mechanical oscillations parallel to the vertical axis.
GS simulators
. vibration simulators
. . **vertical motion simulators**
RT ∞ motion
shakers
shock simulators
vibratory loads

vertical orientation
DEF The attitude of an object in reference to a plane which is parallel to the direction of gravity (determined with a plumbline).
RT alignment
attitude (inclination)
directional stability
dynamic stability
horizontal orientation
lateral stability
∞ orientation
stabilization

vertical perception
GS perception
. sensory perception
. . **vertical perception**
RT body sway test
gravireceptors
oculogravic illusions
∞ orientation
otolith organs
∞ space orientation
vestibular tests

vertical stabilizers
USE **stabilizers (fluid dynamics)**

vertical tails
USE **stabilizers (fluid dynamics)**
tail assemblies

vertical takeoff
UF *vertical takeoff and landing*
VTOL
GS takeoff
. **vertical takeoff**

vertical takeoff aircraft
UF *VTOL aircraft*
GS V/STOL aircraft
. **vertical takeoff aircraft**
. . flying platforms
. . SC–1 aircraft
. . VJ–101 aircraft
. . VZ–6 aircraft
. . X–13 aircraft
. . X–14 aircraft
. . X–19 aircraft
. . X–22 aircraft
. . X–22A aircraft
. . XC–142 aircraft
. . XV–4 aircraft
. . XV–11A aircraft
RT ∞ aircraft
Bell 214A helicopter
CF–700 engine
circulation control rotors
compound helicopters
convertible fan–shaft engines
Cushioncraft ground effect machine
fan in wing aircraft
GETOL aircraft
helicopters
lift fans
lifting rotors
∞ military aircraft
powered lift aircraft
research aircraft
rotary wing aircraft
short takeoff aircraft
∞ subsonic aircraft
T–58 engine
tilt wing aircraft
VATOL aircraft
∞ winged vehicles

vertical takeoff and landing
USE **vertical landing**
vertical takeoff

vertices
USE **apexes**

vertigo
DEF The sensation that the outer world is revolving about the person (objective vertigo) or that he himself is moving in space (subjective vertigo). The word frequently is used erroneously as a synonym for dizziness or giddiness to indicate an unpleasant sensation of disturbed relations to surrounding objects in space.
GS signs and symptoms
. **vertigo**
RT Barany chair
ear pressure test
vestibular tests

Vertikal rockets
(added August 1995)
GS rocket vehicles
. sounding rockets
. . **Vertikal rockets**
RT rocket sounding
Russian Space Program

Vertol military helicopters
USE **Boeing aircraft**

very high frequencies
SN (30 TO 300 MHZ)
GS frequencies
. radio frequencies
. . **very high frequencies**
. . . P band
RT decametric waves
low frequencies
maximum usable frequency

very high frequency radio equipment
UF *ultra short wave radio equipment*
GS radio equipment
. **very high frequency radio equipment**
RT radio astronomy
ultrahigh frequencies

very high speed integrated circuits
USE **VHSIC (circuits)**

Very Large Array (VLA)
DEF A synthetic aperture radio telescope, consisting of 27 parabolic antennas each of which is 25 meters in diameter. The system when connected together is capable of arcsecond resolution with high sensitivity resulting in the world's most powerful radio telescope. Operated by the National Radio Astronomy Observatory, it is located in Socorro, New Mexico.
GS radio equipment
. radio telescopes
. . **Very Large Array (VLA)**
telescopes
. radio telescopes
. . **Very Large Array (VLA)**
RT antenna arrays

radio astronomy

very large scale integration
DEF A very complex integrated circuit, which contains ten thousand or more individual devices, such as basic logic gates and transistors, placed on a single semiconductor chip. Used for VLSI.
UF *VLSI*
GS circuits
. integrated circuits
. . **very large scale integration**
microelectronics
. **very large scale integration**
RT application specific integrated circuits
architecture (computers)
chips (electronics)
hardware description languages
large scale integration
molecular electronics
RISC processors
systolic arrays

very long base interferometry
DEF The simultaneous observation of radio sources by two radio telescopes spaced very far apart to enhance angular resolution. The signals are recorded on magnetic tapes and combined electronically on a computer. Used for VLBI.
UF *VLBI*
GS interferometry
. **very long base interferometry**
RT astronomical interferometry
diffraction patterns
etalons
interferometers
null zones
Quasat
radio astronomy
radio interferometers
Very Long Baseline Array (VLBA)

Very Long Baseline Array (VLBA)
DEF A transcontinental radio telescope, being developed by the National Radio Astronomy Observatory, to consist of ten dedicated and automated 25-meter (82 foot) diameter antennas distributed from Hawaii to St. Croix, Virgin Islands.
GS radio equipment
. radio telescopes
. . **Very Long Baseline Array (VLBA)**
telescopes
. radio telescopes
. . **Very Long Baseline Array (VLBA)**
RT antenna arrays
radio astronomy
very long base interferometry

very low frequencies
SN (3 TO 30 KHZ)
GS frequencies
. radio frequencies
. . low frequencies
. . . **very low frequencies**
RT audio frequencies
Earth-ionosphere waveguide

very small aperture terminals
USE **VSAT (network)**

∞ **vessels**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT blood vessels
∞ capsules
fluid filled shells
liquid filled shells
navy
pressure vessels
ships

Vesta asteroid
GS celestial bodies
. asteroids
. . **Vesta asteroid**
RT asteroid belts
meteoroids
solar system
space debris

vestibular nystagmus
GS eye movements
. nystagmus
. . **vestibular nystagmus**
reflexes
. **vestibular nystagmus**
RT anatomy
eye (anatomy)
ophthalmology

vestibular tests
GS physiological tests
. **vestibular tests**
RT body sway test
Coriolis effect
ear pressure test
head down tilt
head movement
vertical perception
vertigo

vestibules
GS anatomy
. sense organs
. . ear
. . . labyrinth
. . . . **vestibules**
RT morphology
passageways
semicircular canals

vests
RT clothing
garments

veterinary medicine
DEF The branch of medical practice dealing with the treatment of diseases and injuries of animals.
GS medical science
. **veterinary medicine**
RT ∞ biology
diagnosis
diseases
epidemiology
immunology
injuries
∞ medicine
pathology
pharmacology
surgery

VFR (rules)
USE **visual flight rules**

VHDL (computers)
USE **hardware description languages**

VHF omnirange navigation
UF *omnirange navigation*
VOR systems
GS navigation
. radio navigation
. . **VHF omnirange navigation**
RT air navigation
navigation aids
radio direction finders
solar compasses

VHSIC (circuits)
DEF Chips being developed by a DOD program to provide high speed MIL spec VLSI device for use in military systems. Used for very high speed integrated circuits.
UF *very high speed integrated circuits*
GS circuits
. integrated circuits
. . **VHSIC (circuits)**
RT chips (electronics)
large scale integration
signal processing

viability
RT animals
carbon cycle
crop vigor
germination
growth
plants (botany)
seeds

vibration
DEF Motion due to a continuous change in the magnitude of a given force which reverses its direction with time. Motion of an oscillating body during one complete cycle; two oscillations. Used for jitter.
UF *jitter*
GS **vibration**
. combustion vibration
. forced vibration
. free vibration
. lattice vibrations
. POGO effects
. random vibration
. resonant vibration
. structural vibration
. . bending vibration
. . breathing vibration
. . flutter
. . . panel flutter
. . . subsonic flutter
. . . supersonic flutter
. . . transonic flutter
. . linear vibration
. . missile vibration
. . self induced vibration
. . . panel flutter
. . . subsonic flutter
. . . supersonic flutter
. . . transonic flutter
. . torsional vibration
RT acoustics
airfoil oscillations
amplitudes
antinodes
compacting
cyclic loads
displacement
∞ dynamics
elastic waves
fatigue (materials)
flapping
harmonics
isolators
mechanical oscillators
mechanical shock
mistuning (turbomachinery)
modes (standing waves)
∞ motion
nodes (standing waves)
nutation
oscillating cylinders
oscillations
oscillators
resonance

shaking
shock resistance
spacecraft motion
standing waves
vibrational stress
vibratory loads
vibratory polishing
∞ waves
wing oscillations

vibration dampers
USE **vibration isolators**

vibration damping
GS damping
. **vibration damping**
RT acoustics
attenuation
DAST program
elastic damping
flexible spacecraft
gyrodampers
harmonic control
molecular relaxation
nonoscillatory action
nonstabilized oscillation
shock absorbers

vibration effects
GS **vibration effects**
. POGO effects
RT ∞ effects
support interference
vibrational stress

vibration isolators
DEF Resilient supports that tend to isolate systems from steady state excitation. Used for vibration dampers and vibration protection.
UF *vibration dampers*
vibration protection
GS isolators
. **vibration isolators**
RT ∞ absorbers
acoustic retrofitting
cushions
∞ dampers
dampers (valves)
damping
energy absorption
noise reduction
oscillation dampers
shock absorbers
springs (elastic)
suspension systems (vehicles)

vibration measurement
GS mechanical measurement
. **vibration measurement**
RT cepstral analysis
damping tests
frequency analyzers
frequency measurement
∞ measurement
stress measurement

vibration meters
UF *vibrometers*
GS measuring instruments
. **vibration meters**
. . seismographs
. . . lunar seismographs
RT accelerometers
transducers

vibration mode
DEF In a system undergoing vibration, a characteristic pattern assumed by the system in which the motion of every particle is simple harmonic with the same frequency. Used for mode of vibration.
UF *mode of vibration*
GS modes
. **vibration mode**
. . uncoupled modes
RT airfoil oscillations
free vibration
linear vibration
mode transformers
transverse waves

vibration perception
GS perception
. sensory perception
. . **vibration perception**

vibration protection
USE **vibration isolators**

vibration simulators
UF *vibration testing machines*
GS simulators
. **vibration simulators**
. . vertical motion simulators
RT flutter
∞ machinery
shakers
shock simulators
vibratory loads

vibration testing machines
USE **vibration simulators**

vibration tests
GS **vibration tests**
. damping tests
. . stroking tests
RT destructive tests
dynamic tests
electronic equipment tests
engine tests
environmental tests
flight tests
flutter
mechanical engineering
oscillations
resonance testing
shock tests
stability tests
static tests
structural vibration
∞ tests

vibrational freezing
GS phase transformations
. freezing
. . **vibrational freezing**

vibrational frequencies (molecular)
USE **vibrational spectra**

vibrational frequencies (structural)
USE **resonant frequencies**

vibrational relaxation
USE **molecular relaxation**

vibrational spectra
UF *vibrational frequencies (molecular)*
GS spectra
. molecular spectra
. . **vibrational spectra**
. radiation spectra
. . electromagnetic spectra
. . . **vibrational spectra**
RT electronic spectra
energy spectra
molecular relaxation
Raman spectra
rotational spectra
vibrational states

vibrational states
(added December 1993)
SN (LIMITED TO MOLECULAR ENERGY LEVELS – EXCLUDES VIBRATION MODES/CONDITIONS OF STRUCTURES OR VEHICLES)
GS level (quantity)
. energy levels
. . molecular energy levels
. . . **vibrational states**
RT molecular excitation
vibrational spectra

vibrational stress
GS stresses
. **vibrational stress**
RT flutter
vibration
vibration effects
vibratory loads

vibratory loads
GS loads (forces)
. dynamic loads
. . **vibratory loads**
RT aerodynamic loads
cyclic loads
structural design criteria
vertical motion simulators
vibration
vibration simulators
vibrational stress

vibratory polishing
GS polishing
. **vibratory polishing**
RT metallography
vibration

vibrocardiography
USE **phonocardiography**

vibrometers
USE **vibration meters**

VIC method
USE **vortex in cell technique**

Vickers 1100 aircraft
USE **VC-10 aircraft**

Vickers Scimitar aircraft
USE **Scimitar aircraft**

Vickers Valiant aircraft
USE **Valiant aircraft**

Vickers VC-10 aircraft
USE **VC-10 aircraft**

Victor MK-1 aircraft
GS attack aircraft
. bomber aircraft
. . **Victor MK-1 aircraft**
Handley Page aircraft
. **Victor MK-1 aircraft**
jet aircraft
. **Victor MK-1 aircraft**
monoplanes
. **Victor MK-1 aircraft**
reconnaissance aircraft
. **Victor MK-1 aircraft**
RT ∞ aircraft

video communication
GS telecommunication

. video communication
RT high definition television
multimedia
television systems
video signals

video compression
(added September 1993)
UF *compressed video*
GS data compression
. video compression
RT analog data
digital data
digital television
discrete cosine transform
image motion compensation
image processing
signal encoding
video data
video signals

video data
RT analog data
∞ data
data converters
data transmission
digital data
display devices
high definition television
multimedia
radar data
smear
telecommunication
television systems
video compression
video disks
video signals

video disks
DEF Disks, usually the size of long-playing stereo records, which store video data. The data is recorded by one of two techniques: the capacitance method, in which the disk has spiral grooves and is read by a contact stylus, and the optical method, which uses lasers in both the recording and playback of the data.
GS documents
. records
. . video disks
RT data recorders
data recording
data storage
disks (shapes)
magnetic disks
memory (computers)
optical data storage materials
optical disks
optical memory (data storage)
playbacks
video data
video equipment

video equipment
GS video equipment
. picture tubes
. video tape recorders
RT Advanced Vidicon Camera System (AVCS)
audio visual equipment
camera tubes
cathode ray tubes
compensators
display devices
flying spot scanners
motion pictures
optical equipment
oscilloscopes
recording heads
television equipment
video disks
vidicons

video landmark acquisition and tracking
DEF Shuttle era system for earth-feature identification, acquisition, and tracking.
GS tracking (position)
. video landmark acquisition and tracking
RT avionics
image correlators
map matching guidance
scene analysis
signatures
TERCOM
terrain analysis
tracking filters

video signals
DEF Signals with a bandwidth of over 20 kilohertz.
RT signal processing
signal transmission
∞ signals
video communication
video compression
video data

video tape recorders
(added January 1990)
GS recording instruments
. tape recorders
. . video tape recorders
video equipment
. video tape recorders
RT multimedia
video tapes

video tapes
(added April 1989)
RT audio tapes
cinematography
∞ films
information
magnetic tapes
motion pictures
multimedia
photographs
photography
∞ tapes
video tape recorders
visual aids

vidicons
DEF Television pickup tubes utilizing photoconductors as the sensing elements.
GS electron tubes
. camera tubes
. . vidicons
. . . return beam vidicons
. . . . thermicons
RT Advanced Vidicon Camera System (AVCS)
fiber optics
pixels
video equipment

Vietnam
UF *North Vietnam*
Republic of Vietnam
South Vietnam
GS nations
. Vietnam
RT Asia
Southeast Asia

view effects
SN (LIMITED TO EFFECTS OF CHANGE IN ANGULAR SIZE OF FIELD OF VIEW UPON RECEPTORS OF RADIATION)
DEF Effects of change in angular size of field of view upon receptors of radiation.
RT angular correlation
∞ effects
radiant flux density
radiation measuring instruments
radiative heat transfer
viewing

viewing
GS viewing
. field of view
RT display devices
periscopes
view effects
visibility
vision

Vigilante aircraft
USE **A-5 aircraft**

vignetting
RT defects
focusing
lenses

Viking 1 spacecraft
GS interplanetary spacecraft
. Mars probes
. . Viking spacecraft
. . . Viking 1 spacecraft
. . . . Viking lander 1
. . . . Viking orbiter 1
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . Viking 1 spacecraft
. . . . . Viking lander 1
. . . . . Viking orbiter 1
RT interplanetary trajectories
space exploration
space flight

Viking 1975 entry vehicle
GS interplanetary spacecraft
. Mars probes
. . Viking 1975 entry vehicle
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking 1975 entry vehicle
RT Mars landing
soft landing

Viking 2 spacecraft
GS interplanetary spacecraft
. Mars probes
. . Viking spacecraft
. . . Viking 2 spacecraft
. . . . Viking lander 2
. . . . Viking orbiter 2
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . Viking 2 spacecraft
. . . . . Viking lander 2
. . . . . Viking orbiter 2
RT interplanetary trajectories
space exploration
space flight

Viking lander 1
GS interplanetary spacecraft

. Mars probes
. . Viking spacecraft
. . . Viking 1 spacecraft
. . . . **Viking lander 1**
. . . Viking lander spacecraft
. . . . **Viking lander 1**
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . Viking 1 spacecraft
. . . . . **Viking lander 1**
. . . . Viking lander spacecraft
. . . . . **Viking lander 1**
RT interplanetary trajectories
Mars surface samples
space exploration
space flight

Viking lander 2
GS interplanetary spacecraft
. Mars probes
. . Viking spacecraft
. . . Viking 2 spacecraft
. . . . **Viking lander 2**
. . . Viking lander spacecraft
. . . . **Viking lander 2**
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . Viking 2 spacecraft
. . . . . **Viking lander 2**
. . . . Viking lander spacecraft
. . . . . **Viking lander 2**
RT interplanetary trajectories
Mars surface samples
space exploration
space flight

Viking lander spacecraft
GS interplanetary spacecraft
. Mars probes
. . Viking spacecraft
. . . **Viking lander spacecraft**
. . . . Viking lander 1
. . . . Viking lander 2
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . **Viking lander spacecraft**
. . . . . Viking lander 1
. . . . . Viking lander 2
RT interplanetary trajectories
space exploration
space flight

Viking Mars program
GS programs
. NASA programs
. . NASA space programs
. . . **Viking Mars program**
. space programs
. . NASA space programs
. . . **Viking Mars program**
RT space exploration
Viking spacecraft

Viking orbiter 1
GS interplanetary spacecraft
. Mars probes
. . Viking spacecraft
. . . Viking 1 spacecraft
. . . . **Viking orbiter 1**
. . . Viking orbiter spacecraft
. . . . **Viking orbiter 1**
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . Viking 1 spacecraft
. . . . . **Viking orbiter 1**
. . . . Viking orbiter spacecraft
. . . . . **Viking orbiter 1**
RT interplanetary trajectories
space exploration
space flight
∞ spacecraft

Viking orbiter 1975
GS interplanetary spacecraft
. Mars probes
. . Viking spacecraft
. . . Viking orbiter spacecraft
. . . . **Viking orbiter 1975**
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . Viking orbiter spacecraft
. . . . . **Viking orbiter 1975**

Viking orbiter 2
GS interplanetary spacecraft
. Mars probes
. . Viking spacecraft
. . . Viking 2 spacecraft
. . . . **Viking orbiter 2**
. . . Viking orbiter spacecraft
. . . . **Viking orbiter 2**
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . Viking 2 spacecraft
. . . . . **Viking orbiter 2**
. . . . Viking orbiter spacecraft
. . . . . **Viking orbiter 2**
RT interplanetary trajectories
space exploration
space flight
∞ spacecraft

Viking orbiter spacecraft
GS interplanetary spacecraft
. Mars probes
. . Viking spacecraft
. . . **Viking orbiter spacecraft**
. . . . Viking orbiter 1
. . . . Viking orbiter 2
. . . . Viking orbiter 1975
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . **Viking orbiter spacecraft**
. . . . . Viking orbiter 1
. . . . . Viking orbiter 2
. . . . . Viking orbiter 1975
RT interplanetary trajectories
planetary orbits
space exploration
space flight
∞ spacecraft

Viking rocket vehicle
GS rocket vehicles
. single stage rocket vehicles
. . **Viking rocket vehicle**
RT liquid propellant rocket engines
sounding rockets
vanguard 2 launch vehicle

Viking spacecraft
DEF A collective term for the composite Viking orbiter–lander space vehicle.
GS interplanetary spacecraft
. Mars probes
. . **Viking spacecraft**
. . . Viking 1 spacecraft
. . . . Viking lander 1
. . . . Viking orbiter 1
. . . Viking 2 spacecraft
. . . . Viking lander 2
. . . . Viking orbiter 2
. . . Viking lander spacecraft
. . . . Viking lander 1
. . . . Viking lander 2
. . . Viking orbiter spacecraft
. . . . Viking orbiter 1
. . . . Viking orbiter 2
. . . . Viking orbiter 1975
unmanned spacecraft
. space probes
. . Mars probes
. . . **Viking spacecraft**
. . . . Viking 1 spacecraft
. . . . . Viking lander 1
. . . . . Viking orbiter 1
. . . . Viking 2 spacecraft
. . . . . Viking lander 2
. . . . . Viking orbiter 2
. . . . Viking lander spacecraft
. . . . . Viking lander 1
. . . . . Viking lander 2
. . . . Viking orbiter spacecraft
. . . . . Viking orbiter 1
. . . . . Viking orbiter 2
. . . . . Viking orbiter 1975
RT Viking Mars program

vineyards
RT agriculture
blight
botany
crop growth
crop vigor
∞ crops
Earth resources
farm crops
∞ food
irrigation
plants (botany)
wines

vinti theory
GS perturbation theory
. **vinti theory**
RT geodesy
orbit perturbation
∞ theories

vinyl copolymers
GS copolymers
. **vinyl copolymers**
plastics
. synthetic resins
. . addition resins
. . . **vinyl copolymers**
resins
. synthetic resins
. . addition resins
. . . **vinyl copolymers**
vinyl polymers
. **vinyl copolymers**
RT additives
copolymerization
∞ polymers

vinyl cyanide
USE **acrylonitriles**

vinyl ethylene
USE **butadiene**

vinyl polymers
GS **vinyl polymers**
. polyvinyl chloride
. polyvinyl fluoride
. vinyl copolymers
RT∞ polymers
polyvinyl alcohol

vinyl radical
GS **radicals**
. **vinyl radical**
RT **free radicals**

vinylidene
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkenes
. . . . ethylene
. . . . . **vinylidene**

violence
GS **violence**
. attacking (assaulting)
RT crime
disorders
police
warfare

viral diseases
SN (EXCLUDES PLANT DISEASES)
GS **diseases**
. infectious diseases
. . **viral diseases**
. . . acquired immunodeficiency syndrome
. . . influenza
. . . poliomyelitis
. . . smallpox
RT encephalitis
hepatitis
human immunodeficiency virus
meningitis
pneumonia
viruses

Virgin Islands
GS landforms
. islands
. . West Indies
. . . **Virgin Islands**
nations
. United States
. . **Virgin Islands**
RT archipelagoes
Caribbean region
Caribbean Sea
tropical regions

Virginia
GS nations
. United States
. . **Virginia**
RT Allegheny Plateau (US)
Assateague Island (MD–VA)
Chesapeake Bay (US)
Delmarva Peninsula (DE–MD–VA)
Potomac River Valley (MD–VA–WV)
Shenandoah Valley (VA)
Wallops Island

Virgo galactic cluster
DEF A cluster of galaxies nearest to the Milky Way Galaxy, centered in the constellation Virgo and about 16 million light-years from Earth. Used for *Virgo star cluster*.
UF *Virgo star cluster*
GS celestial bodies
. galactic clusters
. . **Virgo galactic cluster**
. galaxies
. . **Virgo galactic cluster**
RT agglomeration
barred galaxies
∞ clusters
disk galaxies
elliptical galaxies
local group (astronomy)
spiral galaxies
star clusters
star distribution
stars

Virgo star cluster
USE **Virgo galactic cluster**

virial coefficients
GS coefficients
. **virial coefficients**
RT equations of state
intermolecular forces
virial theorem

virial theorem
GS theorems
. **virial theorem**
RT kinetic energy
kinetic equations
∞ mechanics (physics)
missing mass (astrophysics)
virial coefficients

virtual memory systems
RT computer systems design
data management
data storage
magnetic storage

virtual properties
RT accuracy
∞ physical properties
∞ properties

virtual reality
(added February 1992)
DEF An artificial reality that projects the user into a three dimensional space generated by the computer.
UF *VR (virtual reality)*
RT cockpit simulators
computerized simulation
environment simulation
flight simulation
human–computer interface
man machine systems
motion simulation
simulation
space environment simulation
training simulators

virulence
RT human immunodeficiency virus
microorganisms
toxicity
viruses

viruses
GS microorganisms
. **viruses**
. . adenoviruses
. . bacteriophages
. . human immunodeficiency virus
RT∞ blisters
interferon
protobiology
viral diseases
virulence

viscera
SN (FOR SPECIFIC ORGANS SEE ANATOMY)
GS organs
. **viscera**
RT abdomen
anatomy
peritoneum
thorax

viscoelastic cylinders
RT∞ cylinders
cylindrical bodies
cylindrical shells

viscoelastic damping
DEF The absorption of oscillatory motions by materials which are viscous while exhibiting certain elastic properties.
GS damping
. elastic damping
. . **viscoelastic damping**
. viscous damping
. . **viscoelastic damping**
elastodynamics
. elastic damping
. . **viscoelastic damping**

viscoelastic flow
USE **viscoelasticity**

viscoelasticity
DEF Property of materials that strain under stress partly elastically and partly viscously, that is, whose strain is partly dependent on time and magnitude of stress. Used for *viscoelastic flow*.
UF *viscoelastic flow*
GS mechanical properties
. elastic properties
. . **viscoelasticity**
. . . photoviscoelasticity
. . . thermoviscoelasticity
RT hydroelasticity
hysteresis
Maxwell fluids
nonNewtonian flow
nonNewtonian fluids
plastic flow
relaxation (mechanics)
squeeze films
viscoplasticity
viscous damping

viscometers
GS measuring instruments
. **viscometers**
RT rotating cylinders
viscometry
viscosity

viscometry
RT rotating cylinders
viscometers
viscosity
viscous drag
viscous flow

viscoplastic flow
USE **viscoplasticity**

viscoplasticity
UF *viscoplastic flow*
GS mechanical properties
. plastic properties
. . **viscoplasticity**
RT hysteresis
nonNewtonian flow
nonNewtonian fluids
plastic anisotropy
plastic flow
relaxation (mechanics)
viscoelasticity
viscous damping

viscopumps
GS pumps
. **viscopumps**
RT viscous flow

viscosity
DEF That molecular property of a fluid which enables it to support tangential stresses for a finite time and thus to resist deformation; the ratio of shear stress divided by shearing strain.
GS transport properties
. **viscosity**
. . eddy viscosity
. . gas viscosity
RT density (mass/volume)
flow characteristics
flow resistance
internal friction
low Reynolds number
∞ motion
∞ physical properties
rheology
similitude law
solubility
Stokes law (fluid mechanics)
superfluidity
surface properties
thermal diffusion
thermal diffusivity
thixotropy
viscometers
viscometry
viscous flow

Viscount aircraft
GS BAC aircraft
. **Viscount aircraft**
jet aircraft
. turboprop aircraft
. . **Viscount aircraft**
monoplanes
. **Viscount aircraft**
passenger aircraft
. **Viscount aircraft**
transport aircraft
. **Viscount aircraft**
RT ∞ aircraft

viscous damping
DEF The dissipation of energy that occurs when a particle in a vibrating system is resisted by a force that has a magnitude proportional to the magnitude of the velocity of the particle and direction opposite to the direction of the particle.
GS damping
. **viscous damping**
. . viscoelastic damping
RT elastic damping
resonance testing
viscoelasticity
viscoplasticity

viscous drag
GS dynamic characteristics
. drag
. . friction drag
. . . **viscous drag**
friction
. flow resistance
. . friction drag
. . . **viscous drag**
. skin friction
. . friction drag
. . . **viscous drag**
RT eddy viscosity
Hartmann number
laminar flow
turbulent flow
viscometry

viscous flow
DEF The flow of a fluid through a duct under conditions such that the mean free path is very small in comparison with the smallest dimensions of a transverse section of the duct. This flow may be either laminar or turbulent.
GS fluid flow
. **viscous flow**
. . boundary layer flow
. . . reattached flow
. . . secondary flow
. . . separated flow
. . . . boundary layer separation
. . Couette flow
. . Karman–Bodewadt flow
. . Stokes flow
RT aerodynamics
barotropic flow
eddy viscosity
∞ flow
flow characteristics
gas flow
inviscid flow
Knudsen flow
laminar flow
magnetohydrodynamic shear heating
Maxwell fluids
Milne–Thomson method
Navier–Stokes equation
Pohlhausen method
Prandtl number
Reynolds number
turbulent flow
viscometry
viscopumps
viscosity
wedge flow

viscous fluids
DEF Fluids whose molecular viscosity is sufficiently large to make the viscous forces a significant part of the total force field in the fluid.
RT flow stability
∞ fluids
Maxwell fluids
Navier–Stokes equation
Newtonian fluids
nonNewtonian fluids
Oseen approximation
semisolids
squeeze films
weightless fluids

visibility
UF *invisibility*
GS **visibility**
. low visibility
RT appearance
brightness
ceilings (meteorology)
character recognition
color
contrast
darkening
enhanced vision
fog
glare
haze
human factors engineering
illuminance
image contrast
legibility
light (visible radiation)
light transmission
luminescence
luminosity
night flights (aircraft)
opacity
optical properties
perception
radiance
reading
resolution
retinal adaptation
sensitivity
smoke
symbols
transmissivity
viewing
vision
visual control
whiteout

visible infrared spin scan radiometer
DEF A radiometer used for satellite sounding of the atmosphere.
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . infrared detectors
. . . . . infrared radiometers
. . . . . **visible infrared spin scan radiometer**
. . infrared instruments
. . . infrared detectors
. . . . infrared radiometers
. . . . . **visible infrared spin scan radiometer**
RT atmospheric sounding
satellite sounding
satellite-borne instruments

visible radiation
USE **light (visible radiation)**

visible spectrum
DEF The range of wavelengths of visible radiation; display or graph of the intensity of visible radiation emitted or absorbed by a material as a function of wavelength or some related parameter.
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . **visible spectrum**
RT ∞ absorption
absorption spectra
astronomical spectroscopy
auroral spectroscopy
cathodoluminescence
emission spectra
gas spectroscopy
light (visible radiation)
line spectra
molecular spectra
solar spectra
spectral bands
spectroscopy

stellar spectra

vision
UF *macular vision*
GS **vision**
. binocular vision
. color vision
. enhanced vision
. monocular vision
. night vision
. peripheral vision
. stereoscopic vision
RT **adaptation**
anastigmatism
blindness
brightness
choroid membranes
color
conjunctiva
contrast
cornea
dark adaptation
eye (anatomy)
eye dominance
flash blindness
glare
heterophoria
human factors engineering
hyperopia
illusions
images
legibility
light adaptation
miosis
myopia
oculomotor nerves
ophthalmodynamometry
optometry
perception
phosphene
presbyopia
pupils
resolution
retina
retinal adaptation
retinal images
thresholds (perception)
viewing
visibility
visual acuity

visors
RT **eye protection**
radiation protection
sunglasses

visual accommodation
RT **accommodation**

visual acuity
DEF **Keenness of perception and sharpness of vision.**
GS **acuity**
. **visual acuity**
. . hyperopia
RT **peripheral vision**
Snellen tests
vision

visual aids
RT ∞ **aids**
audio visual equipment
audio visual material
charts
diagrams
display devices
drawings
multimedia
photographs
training devices
video tapes

visual control
GS **manual control**
. **visual control**
RT **aircraft control**
approach control
attitude control
∞ **control**
display devices
guidance (motion)
missile control
remote control
runway lights
servocontrol
spacecraft control
visibility

visual discrimination
GS **discrimination**
. **sensory discrimination**
. . **visual discrimination**
perception
. **sensory perception**
. . **visual perception**
. . . **visual discrimination**
RT ∞ **recovery**

visual displays
USE **display devices**

visual fields
RT **field of view**
∞ **fields**
peripheral vision
retina
retinal images
Saccadic eye movements
space perception

visual flight
RT **air navigation**
collision avoidance
∞ **flight**
flight conditions
flight paths
flight safety
landing
whiteout

visual flight rules
UF *VFR (rules)*
GS **rules**
. **flight rules**
. . **visual flight rules**

visual observation
GS **observation**
. **visual observation**
RT **companion stars**
seeing (astronomy)
space observations (from Earth)

visual perception
UF *sight*
GS **perception**
. **sensory perception**
. . **visual perception**
. . . **critical flicker fusion**
. . . **space perception**
. . . . **autokinesis**
. . . **visual discrimination**
RT **afterimages**
blinking
brightness discrimination
elevator illusion
motion perception
∞ **orientation**
perceptual errors
∞ **space orientation**
tachistoscopes
thresholds (perception)
visual tasks

visual photometry
DEF **A subjective approach to the problem of photometry, wherein the human eye is used as the sensing instrument; to be distinguished from photoelectric photometry.**
GS **optical measurement**
. **photometry**
. . **visual photometry**

visual pigments
GS **pigments**
. **visual pigments**
RT **dark adaptation**
photoreceptors
photosensitivity
retina

visual signals
RT **beacons**
cues
luminaires
optical communication
∞ **signals**

visual stimuli
RT **perceptual errors**
∞ **signals**
∞ **stimuli**
visual tasks

visual tasks
GS **tasks**
. **visual tasks**
RT **eye movements**
human performance
visual perception
visual stimuli

visual tracking
USE **optical tracking**

visualization of flow
USE **flow visualization**

vitamin A
USE **retinene**

vitamin B
USE **thiamine**

vitamin B 2
USE **riboflavin**

vitamin B 6
USE **pyridoxine**

vitamin B 12
USE **cyanocobalamin**

vitamin B complex
USE **biotin**

vitamin C
USE **ascorbic acid**

vitamin D
USE **calciferol**

vitamin E
USE **tocopherol**

vitamin G
USE **riboflavin**

vitamin K
USE **phylloquinone**

vitamin M
USE **folic acid**

vitamin P
USE **bioflavonoids**

vitamins
GS **vitamins**
. ascorbic acid
. bioflavonoids
. biotin
. calciferol
. carnitine
. cyanocobalamin
. folic acid
. nicotinamide
. nicotinic acid
. phylloquinone
. pyridoxine
. retinene
. riboflavin
. thiamine
. tocopherol
RT ascorbic acid metabolism
choline
drugs
∞ food
∞ nutrients

Viterbi decoders
GS decoders
. **Viterbi decoders**
RT coding
decoding
signal encoding
signal processing

Viton rubber (trademark)
GS copolymers
. **Viton rubber (trademark)**
elastomers
. rubber
. . synthetic rubbers
. . . **Viton rubber (trademark)**
RT fluorohydrocarbons

vitreous materials
RT frit
glass
∞ inorganic materials
∞ materials
metallic glasses
porcelain
vitrification

vitrification
DEF Formation of a glassy or noncrystalline material.
RT ceramics
glass
porcelain
solidification
vitreous materials

VJ-101 aircraft
GS jet aircraft
. **VJ-101 aircraft**
monoplanes
. **VJ-101 aircraft**
single engine aircraft
. **VJ-101 aircraft**
supersonic aircraft
. **VJ-101 aircraft**
VISTOL aircraft
. vertical takeoff aircraft
. . **VJ-101 aircraft**
RT∞ aircraft

vlasov equations
GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **vlasov equations**
RT∞ equations
stability

VLBI
USE **very long base interferometry**

VLF emission recorders
RT atmospheric radiation
atmospherics
cosmic rays
electromagnetic radiation
planetary radiation
∞ recorders
recording instruments

VLSI
USE **very large scale integration**

vocal cords
GS anatomy
. respiratory system
. . larynx
. . . **vocal cords**
RT glottis

vocoders
RT bandpass filters
computers
digital to voice translators
frequency modulation
messages
radio communication
scrambling (communication)
signal reception
speech baseband compression
voice communication
voice data processing

voice
RT audio frequencies
speech
tongue

voice communication
GS telecommunication
. communication
. . **voice communication**
. . . telephony
RT acoustics
conversation
echo suppressors
ground-air-ground communication
multimedia
radio communication
radiotelephones
reentry communication
scrambling (communication)
single channel per carrier transmission
single sideband transmission
speech
speech baseband compression
verbal communication
vocoders
voice control
voice data processing
wireless communication
words (language)

voice control
SN (DEVICE OPERATION BY VOICE)
DEF Using the voice to activate devices which respond or operate by means of speech recognition. SN (device operation by voice).
RT bioengineering
∞ control
robotics
robots
speech recognition
voice communication
voice data processing

voice data processing
GS data processing
. **voice data processing**
. . cepstral analysis
RT artificial intelligence
∞ data
digital to voice translators
signal encoding
single channel per carrier transmission
vector quantization
verbal communication
vocoders
voice communication
voice control

Voice of America
RT broadcasting
radio transmission

void ratio
UF compactness
GS ratios
. **void ratio**
RT∞ conductivity
density (mass/volume)
free flow
hole distribution (mechanics)
packing density
permeability
porosity
reactor cores
surface properties
voids

voids
RT buoyancy
cavities
crack geometry
crack opening displacement
defects
inclusions
infiltration
interstices
percolation
permeability
porosity
void ratio

Voigt effect
RT birefringence
∞ effects
optical paths
refraction
Zeeman effect

volatility
GS thermodynamic properties
. thermophysical properties
. . **volatility**
RT coal gasification
evaporation
flash point
prevaporization
vapor phases
vapor pressure

vaporizing

volatilization
USE **vaporizing**

volcanics
USE **volcanology**

volcanoes
DEF Naturally occuring vents or fissures at the Earth's surface through which erupt molten, solid, and gaseous materials.
UF *active volcanoes*
GS geology
. **volcanoes**
. . Mars volcanoes
landforms
. **volcanoes**
. . Mars volcanoes
RT basalt
calderas
cones (volcanoes)
effusives
geomorphology
geothermal resources
lava
mountains
orography
paleomagnetism
petrology
Rouse belts
volcanology

volcanology
UF *volcanics*
GS geology
. **volcanology**
RT basalt
calderas
cones (volcanoes)
effusives
geomorphology
lava
Mars volcanoes
mountains
orography
paleomagnetism
petrogenesis
petrology
Rouse belts
volcanoes

volt-ampere characteristics
RT capacitance-voltage characteristics
∞ characteristics
electric current
electric potential
∞ electronics
linear circuits
Ohms law
open circuit voltage
optogalvanic spectroscopy
proximity effect (electricity)
quantum efficiency
short circuit currents
threshold voltage
transconductance
voltage amplifiers

voltage
USE **electric potential**

voltage amplifiers
GS amplifiers
. **voltage amplifiers**
RT current amplifiers
feedback amplifiers
magnetic amplifiers
preamplifiers
volt-ampere characteristics

voltage breakdown
USE **electrical faults**

voltage controlled oscillators
DEF An oscillator whose frequency of oscillation can be varied by changing an applied voltage. Used for VCO.
UF *VCO*
GS oscillators
. **voltage controlled oscillators**
RT circuits
electric control
electric networks
frequency modulation
frequency stability
microwave oscillators
voltage regulators

voltage converters (AC to AC)
GS transformers
. **voltage converters (AC to AC)**
RT alternating current
auxiliary power sources
∞ converters
∞ electric equipment
∞ electric power
∞ power supplies

voltage converters (DC to DC)
RT auxiliary power sources
∞ converters
direct current
electric batteries
∞ electric equipment
∞ electric power
∞ power supplies
power supply circuits

voltage generators
RT arc generators
electrostatic generators
function generators
∞ generators
signal generators

voltage measurement
USE **electrical measurement**

voltage regulators
GS control equipment
. regulators
. . **voltage regulators**
RT avalanche diodes
circuit protection
controllers
current regulators
electric switches
electronic control
power factor controllers
power supply circuits
switching circuits
transformers
transmission loss
voltage controlled oscillators

voltage variation indicators
USE **voltmeters**

Volterra equations
GS analysis (mathematics)
. functional analysis
. . integral equations
. . . **Volterra equations**
RT ∞ equations
nonlinearity
∞ radiation

voltmeters
UF *voltage variation indicators*
GS measuring instruments
. **voltmeters**
. . millivoltmeters
RT ammeters
coulometers
electrometers
potentiometers (instruments)

volume
GS **volume**
. body volume (biology)
RT **area**
∞ capacity
dimensions
frustums
geometry
isochoric processes
rates (per time)
thickness
volumetric analysis
weight (mass)

volume fraction
USE **concentration (composition)**

volumetric analysis
GS chemical tests
. chemical analysis
. . **volumetric analysis**
RT analytical chemistry
gas analysis
quantitative analysis
volume

volumetric efficiency
RT energy conversion efficiency
engine design
fuel-air ratio
laser outputs

volumetric strain
GS fatigue (materials)
. **volumetric strain**
RT deformation
structural strain
temperature inversions

vomiting
RT motion sickness
nausea

Von Karman equation
GS flow equations
. **Von Karman equation**
RT ∞ equations
flow stability
Karman vortex street
vortex breakdown
vortex streets
vorticity equations

von Mises theory
USE **stress functions**

von Zeipel method
RT equations of motion
Hamiltonian functions
∞ methodology
perturbation theory

Voodoo aircraft
USE **F-101 aircraft**

VOR systems
USE **VHF omnirange navigation**

vortex advisory system
DEF Display system which compares measured on-minute-average wind magnitudes and direction with the wind-rose criterion to predict wake vorticity and to indicate to the air traffic controller (with a red or green light) when the interarrival spacings for landings may be reduced to the 3 nautical mile limit.
RT air traffic control
aircraft approach spacing
aircraft wakes
∞ systems
turbulent wakes
vortex alleviation

vortex alleviation
DEF The alteration of airfoil configurations to change the airflow patterns directly behind the wings to eliminate or inhibit the vertical motion which directly affects the aircraft immediately following, during closely spaced landings.
RT aircraft wakes
drag devices
gust alleviators
protuberances
riblets
spoilers
vortex advisory system
vortices
wakes
winglets

vortex avoidance
DEF Schemes which involve airborne or ground-based equipment to track, monitor, and/or predict vortex behavior which might affect the approach and landing operations.
GS avoidance
. **vortex avoidance**
RT aerodynamic stability
air traffic control
aircraft approach spacing
aircraft landing
buffeting
gusts
rotation
safety
turbulent flow
vortices
winglets

vortex breakdown
RT flow stability
turbulent flow
Von Karman equation
vortex flaps

vortex columns
USE **vortices**

vortex disturbances
USE **vortices**

vortex filaments
DEF The fine-scale structure of turbulent flow; the small non energy containing eddies convected at mean freestream velocities.
RT ∞ filaments
flow stability
fluid dynamics
horseshoe vortices
turbulence
vortex in cell technique
vortices

vortex flaps
DEF Leading edge flap designs for highly swept wings, in which the leading edge tabs, which are counter reflected, cause vortices to form on the flap. The trapped vortices cause significantly improved wind flow characteristics.
GS airfoils
. flaps (control surfaces)
. . wing flaps
. . . **vortex flaps**
brakes (for arresting motion)
. aerodynamic brakes
. . wing flaps
. . . **vortex flaps**
. aircraft brakes
. . wing flaps
. . . **vortex flaps**
control surfaces
. flaps (control surfaces)
. . wing flaps
. . . **vortex flaps**
drag devices
. aerodynamic brakes
. . wing flaps
. . . **vortex flaps**
RT aerodynamic drag
jet flaps
leading edge flaps
leading edges
lift augmentation
separated flow
trailing edge flaps
trailing edges
vortex breakdown
vortices
wing loading

vortex flow
USE **vortices**

vortex generation
USE **vortex generators**

vortex generators
UF *vortex generation*
RT airfoil fences
boundary layer control
boundary layer separation
∞ generators
Hilsch tubes
horseshoe vortices
inlet flow
vortices
wing slots

vortex in cell technique
(added April 1993)
UF *VIC method*
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **vortex in cell technique**
RT computational fluid dynamics
fast Fourier transformations
finite difference theory
∞ methodology
particle in cell technique
Poisson equation
vortex filaments
vortices

vortex injectors
GS injectors
. **vortex injectors**

vortex lattice method
(added April 1992)
RT boundary conditions
computational fluid dynamics
flow velocity
flux vector splitting
lattices (mathematics)
panel method (fluid dynamics)
vortices

vortex precession
RT flow velocity
flowmeters
precession
velocity measurement
vortices

vortex rings
RT horseshoe vortices
∞ rings
trapped vortices
vortices

vortex shedding
DEF Periodic separation of a fluid flowing past an unstreamlined body.
GS fluid mechanics
. fluid dynamics
. . **vortex shedding**
RT shedding
vortices

vortex sheets
RT aircraft design
flow distribution
rotating fluids
∞ sheets
turbulent wakes
vortices
vorticity

vortex streets
DEF Two parallel rows of alternately placed vortices along the wake of an obstacle in a fluid of moderate Reynolds number.
GS **vortex streets**
. Karman vortex street
RT discontinuity
∞ sheets
turbulent wakes
Von Karman equation
vortices

vortex traps
USE **trapped vortices**

vortex tubes
USE **Hilsch tubes**
vortices

vortex-blade interaction
USE **blade-vortex interaction**

vortices
DEF In fluids, circulations drawing their energy from flows of much larger scale and brought about by pressure irregularities. Used for eddies, rotational flow, vortex columns, vortex disturbances, vortex flow, and vortex tubes.
UF *eddies*
rotational flow
vortex columns
vortex disturbances
vortex flow
vortex tubes
GS **vortices**
. horseshoe vortices
. trapped vortices
. wing tip vortices
RT Abrikosov theory
agitation
blade-vortex interaction
cavitation flow
counterflow
∞ disturbances

divergence
flow distortion
flow stability
fluid flow
Goertler instability
Hilsch tubes
Kolmogorov theory
large eddy simulation
meteorological solenoids
mixing
planetary waves
recirculative fluid flow
rotating fluids
rotating liquids
rotation
secondary flow
Strouhal number
superconductivity
superfluidity
thrust distribution
turbulence
turbulent flow
turbulent mixing
vortex alleviation
vortex avoidance
vortex filaments
vortex flaps
vortex generators
vortex in cell technique
vortex lattice method
vortex precession
vortex rings
vortex shedding
vortex sheets
vortex streets
vorticity
wakes

vorticity
UF *enstrophy*
GS algebra
. vector spaces
. . vectors (mathematics)
. . . **vorticity**
analysis (mathematics)
. calculus
. . vector analysis
. . . curl (vectors)
. . . . **vorticity**
. real variables
. . vector analysis
. . . curl (vectors)
. . . . **vorticity**
geometry
. vector analysis
. . curl (vectors)
. . . **vorticity**
RT atmospheric circulation
Beltrami flow
Crocco method
flow stability
Helmholtz vorticity equation
horseshoe vortices
potential flow
secondary flow
trapped vortices
turbulence
vortex sheets
vortices

vorticity equations
DEF Dynamic equations for the rate of change on the vorticity of a parcel, obtained by taking the curl of the vector equation of motion.
GS analysis (mathematics)
. real variables
. . differential equations
. . . **vorticity equations**
. . . . Helmholtz vorticity equation
flow equations
. **vorticity equations**
. . Helmholtz vorticity equation
RT ∞ equations
Karman vortex street
Von Karman equation

vorticity transport hypothesis
GS hypotheses
. **vorticity transport hypothesis**
RT conservation equations
eddy currents
mixing length flow theory
turbulent flow

Voskhod 1 spacecraft
GS manned spacecraft
. voskhod manned spacecraft
. . **Voskhod 1 spacecraft**
reentry vehicles
. recoverable spacecraft
. . voskhod manned spacecraft
. . . **Voskhod 1 spacecraft**
soft landing spacecraft
. voskhod manned spacecraft
. . **Voskhod 1 spacecraft**

Voskhod 2 spacecraft
GS manned spacecraft
. voskhod manned spacecraft
. . **Voskhod 2 spacecraft**
reentry vehicles
. recoverable spacecraft
. . voskhod manned spacecraft
. . . **Voskhod 2 spacecraft**
soft landing spacecraft
. voskhod manned spacecraft
. . **Voskhod 2 spacecraft**

voskhod manned spacecraft
GS manned spacecraft
. **voskhod manned spacecraft**
. . Voskhod 1 spacecraft
. . Voskhod 2 spacecraft
reentry vehicles
. recoverable spacecraft
. . **voskhod manned spacecraft**
. . . Voskhod 1 spacecraft
. . . Voskhod 2 spacecraft
soft landing spacecraft
. **voskhod manned spacecraft**
. . Voskhod 1 spacecraft
. . Voskhod 2 spacecraft
RT space capsules

Vostok 1 spacecraft
GS manned spacecraft
. Vostok spacecraft
. . **Vostok 1 spacecraft**
reentry vehicles
. recoverable spacecraft
. . Vostok spacecraft
. . . **Vostok 1 spacecraft**
soft landing spacecraft
. Vostok spacecraft
. . **Vostok 1 spacecraft**

Vostok 2 spacecraft
GS manned spacecraft
. Vostok spacecraft
. . **Vostok 2 spacecraft**
reentry vehicles
. recoverable spacecraft
. . Vostok spacecraft
. . . **Vostok 2 spacecraft**
soft landing spacecraft
. Vostok spacecraft
. . **Vostok 2 spacecraft**

Vostuk 3 spacecraft
GS manned spacecraft
. Vostok spacecraft
. . **Vostok 3 spacecraft**
reentry vehicles
. recoverable spacecraft
. . Vostok spacecraft
. . . **Vostok 3 spacecraft**
soft landing spacecraft
. Vostok spacecraft
. . **Vostok 3 spacecraft**

Vostok 4 spacecraft
GS manned spacecraft
. Vostok spacecraft
. . **Vostok 4 spacecraft**
reentry vehicles
. recoverable spacecraft
. . Vostok spacecraft
. . . **Vostok 4 spacecraft**
soft landing spacecraft
. Vostok spacecraft
. . **Vostok 4 spacecraft**

Vostok 5 spacecraft
GS manned spacecraft
. Vostok spacecraft
. . **Vostok 5 spacecraft**
reentry vehicles
. recoverable spacecraft
. . Vostok spacecraft
. . . **Vostok 5 spacecraft**
soft landing spacecraft
. Vostok spacecraft
. . **Vostok 5 spacecraft**

Vostok 6 spacecraft
GS manned spacecraft
. Vostok spacecraft
. . **Vostok 6 spacecraft**
reentry vehicles
. recoverable spacecraft
. . Vostok spacecraft
. . . **Vostok 6 spacecraft**
soft landing spacecraft
. Vostok spacecraft
. . **Vostok 6 spacecraft**

Vostok spacecraft
GS manned spacecraft
. **Vostok spacecraft**
. . Vostok 1 spacecraft
. . Vostok 2 spacecraft
. . Vostok 3 spacecraft
. . Vostok 4 spacecraft
. . Vostok 5 spacecraft
. . Vostok 6 spacecraft
reentry vehicles
. recoverable spacecraft
. . **Vostok spacecraft**
. . . Vostok 1 spacecraft
. . . Vostok 2 spacecraft
. . . Vostok 3 spacecraft
. . . Vostok 4 spacecraft
. . . Vostok 5 spacecraft
. . . Vostok 6 spacecraft
soft landing spacecraft
. **Vostok spacecraft**
. . Vostok 1 spacecraft
. . Vostok 2 spacecraft
. . Vostok 3 spacecraft
. . Vostok 4 spacecraft
. . Vostok 5 spacecraft
. . Vostok 6 spacecraft
RT space capsules

voting
RT governments
law (jurisprudence)
minorities
politics
sovereignty

vowels
RT consonants (speech)
grammars
languages
words (language)

Voyager 1 spacecraft
DEF A spacecraft launched in the 1977 Voyager mission.
GS interplanetary spacecraft
. **Voyager 1 spacecraft**
unmanned spacecraft
. space probes
. . **Voyager 1 spacecraft**
RT flyby missions
Grand Tours
Jupiter (planet)
Jupiter probes
Jupiter rings
∞ spacecraft

Voyager 2 spacecraft
DEF A spacecraft launched in the 1977 Voyager mission.
GS interplanetary spacecraft
. **Voyager 2 spacecraft**
unmanned spacecraft
. space probes
. . **Voyager 2 spacecraft**
RT flyby missions
Grand Tours
Jupiter (planet)
Jupiter probes
Neptune (planet)
Saturn (planet)
∞ spacecraft
Uranus (planet)

Voyager 1977 mission
DEF The launching of two advanced three-axis attitude stabilized spacecraft for the exploration of Jovian and Saturnian environments including investigation of the gravitational fields, atmospheric dynamics, and magnetospheres of these planets.
GS space missions
. flyby missions
. . Grand Tours
. . . **Voyager 1977 mission**
RT interplanetary spacecraft
Jupiter (planet)
Jupiter probes
∞ missions
solar system
space probes

Voyager project
GS programs
. NASA programs
. . NASA space programs
. . . **Voyager project**
. projects
. . **Voyager project**
. space programs
. . NASA space programs
. . . **Voyager project**
RT Mars probes
Saturn project
space probes
unmanned spacecraft
Venus probes

Voyageur helicopter
USE **CH–46 helicopter**

VR (virtual reality)
USE **virtual reality**

VSAT (network)
UF *very small aperture terminals*
GS data processing equipment
. data processing terminals
. . **VSAT (network)**
networks
. communication networks
. . **VSAT (network)**
. satellite networks
. . **VSAT (network)**
RT Aloha system
apertures
ARPA computer network
computer networks
data links
data transmission
distributed processing
Earth terminals
interprocessor communication
local area networks
microwave transmission
needs (data system)
personal computers
random access
superhigh frequencies
telecommunication

VTOL
USE **vertical landing**
vertical takeoff

VTOL aircraft
USE **vertical takeoff aircraft**

Vulcan aircraft
UF *AVRO 698 aircraft*
GS attack aircraft
. bomber aircraft
. . **Vulcan aircraft**
Hawker Siddeley aircraft
. **Vulcan aircraft**
jet aircraft
. **Vulcan aircraft**
tailless aircraft
. **Vulcan aircraft**
RT ∞ aircraft
AVRO 707 aircraft
Harrier aircraft

vulcanizates
USE **vulcanized elastomers**

vulcanized elastomers
UF *gum vulcanizates*
vulcanizates
GS elastomers
. rubber
. . synthetic rubbers
. . . **vulcanized elastomers**
. . . . RTV–40 rubber (trademark)
. . . . RTV–60 rubber (trademark)
RT addition resins
polyether resins
thermoplastic resins
vulcanizing

vulcanizing
DEF A chemical reaction in which the physical properties of a rubber are changed in the direction of decreased plastic flow, less surface tackiness, and increased tensile strength by reacting it with sulfur or other suitable agents.
GS crosslinking
. **vulcanizing**
RT curing
vulcanized elastomers

vulnerability
GS **vulnerability**
. nuclear vulnerability
RT aircraft reliability
aircraft survivability
airport security
durability
integrity
life (durability)
obstacle avoidance
penetration
piercing
reliability
∞ resistance
security
sensitivity
spacecraft defense
spacecraft survivability
stability

Vycor
GS fibers
. synthetic fibers
. . **Vycor**
glass
. **Vycor**
semiconductors (materials)
. **Vycor**
RT glass fibers
∞ materials
silicon dioxide

VZ–2 aircraft
GS Boeing aircraft
. **VZ–2 aircraft**
research vehicles
. research aircraft
. . **VZ–2 aircraft**
tilt wing aircraft
. **VZ–2 aircraft**
V/STOL aircraft
. **VZ–2 aircraft**
RT ∞ aircraft

VZ–8 aircraft
UF *Airgeep aircraft*
GS light aircraft
. **VZ–8 aircraft**
Piasecki aircraft
. **VZ–8 aircraft**
research vehicles
. research aircraft
. . **VZ–8 aircraft**
V/STOL aircraft
. vertical takeoff aircraft
. . **VZ–8 aircraft**
RT ∞ aircraft
flying platforms

VZ–10 aircraft
USE **XV–4 aircraft**

VZ–11 aircraft
USE **XV–6 aircraft**

VZ–12 aircraft
USE **P–1127 aircraft**

W

W stars
USE **Wolf-Rayet stars**

W wings
USE **variable sweep wings**

W-R stars
USE **Wolf-Rayet stars**

W2F aircraft
USE **E-2 aircraft**

Wabash River Basin (IL-IN-OH)
GS landforms
. structural basins
. . river basins
. . . **Wabash River Basin (IL-IN-OH)**
RT Illinois
Indiana
Ohio
rivers

wadis
DEF A term used in the desert regions of Southwest Asia and Northern Africa for a stream bed or channel, or a steep sided and bouldery ravine, gully or valley, or a dry wash, that is usually dry except during the rainy season and that often forms an oasis.
GS landforms
. structural basins
. . river basins
. . . **wadis**
RT arid lands
desertification
rivers
streams
topography
valleys
water runoff

wafers
RT microelectronics
microminiaturization
miniaturization
photomasks
semiconductor devices
solid state devices
thin films
vertical junction solar cells

wage surveys
GS reports
. **wage surveys**
surveys
. **wage surveys**
RT cost analysis
cost estimates
cost reduction
employee relations
finance
personnel

wakefulness
RT alertness
sleep deprivation

wakes
GS **wakes**
. aircraft wakes
. . helicopter wakes
. . slipstreams
. . . propeller slipstreams
. hypersonic wakes
. laminar wakes
. near wakes
. supersonic wakes
. turbulent wakes
. . slipstreams
. . . propeller slipstreams
RT backwash
base flow
bubbles
cavitation flow
contrails
downwash
∞ drafi
drag
ground effect (aerodynamics)
horseshoe vortices
Strouhal number
turbulence
vortex alleviation
vortices

Wales
(added November 1989)
GS nations
. United Kingdom
. . **Wales**
RT Europe

walking
GS locomotion
. **walking**
RT physical exercise

walking machines
GS surface vehicles
. **walking machines**
RT astronaut maneuvering equipment
lunar surface vehicles
∞ machinery
manned lunar surface vehicles
prosthetic devices

wall flow
GS fluid flow
. **wall flow**
RT boundary layer flow
channel flow
conical flow
discharge coefficient
ducted flow
Goertler instability
heat transmission
Manning theory
two dimensional flow
two dimensional jets

wall jets
RT fluid amplifiers
jet boundaries
jet flow
jet vanes
∞ jets

wall pressure
GS pressure
. **wall pressure**
RT boundary layers
pressure distribution
pressure vessels
thick walls

wall temperature
GS surface properties
. surface temperature
. . **wall temperature**
temperature
. surface temperature
. . **wall temperature**
RT operating temperature
thick walls

Wallops Island
GS landforms
. islands
. . **Wallops Island**
RT Atlantic Ocean
Virginia

walls
UF *cold walls*
GS **walls**
. bulkheads
. nozzle walls
. porous walls
. thick walls
. thin walls
. Trombe walls
. wind tunnel walls
RT ∞ barriers
buildings
curtains
enclosures
floors
gates (openings)
housings
limiters (fusion reactors)
panels
partitions (structures)
sandwich structures
sheaths
shells (structural forms)
sides
studs (structural members)
substructures
ties

Walsh function
GS analysis (mathematics)
. complex variables
. . orthogonal functions
. . . **Walsh function**
functions (mathematics)
. orthogonal functions
. . **Walsh function**
RT fast Fourier transformations
Fourier transformation
functional analysis
matrices (mathematics)

WAN
USE **wide area networks**

Wankel engines
GS engines
. internal combustion engines
. . rotary engines
. . . **Wankel engines**
RT aircraft engines
automobile engines
piston engines

war games
RT digital simulation
game theory
mathematical models
operations research
simulation

warfare
GS warfare
. antiship warfare
. antisubmarine warfare

. chemical warfare
. combat
. electronic warfare
. nuclear warfare
RT attacking (assaulting)
B-1 aircraft
chemical defense
evasive actions
infiltration
international law
ordnance
peacetime
politics
strategy
violence

warheads
DEF Originally the parts of the missile carrying the explosive, chemical, or other charge intended to damage the enemy. By extension, the term is sometimes used as synonymous with payload or nose cone.
GS weapons
. **warheads**
. . nuclear warheads
. . precision guided projectiles
RT ammunition
antiship warfare
bombs (ordnance)
explosive devices
explosives
∞ fuses
fuses (ordnance)
missile components
missiles
nose cones
nuclear devices
nuclear weapons
payloads
projectiles
∞ rockets
shaped charges
torpedoes

warm blooded animals
USE **homeotherms**

warm fronts
GS fronts (meteorology)
. **warm fronts**
RT air masses
cold fronts
∞ fronts
meteorological parameters
meteorology
storms
synoptic meteorology
thunderstorms
tornadoes
weather forecasting

warming
USE **heating**

warning
RT accident prevention
auditory signals
bells
civil defense
collision avoidance
detection
∞ detectors
early warning systems
fire prevention
horns
mine detectors
monitors
protection
safety
safety devices

warning devices
USE **warning systems**

warning signals
USE **warning systems**

Warning Star aircraft
USE **C-121 aircraft**

warning systems
UF *alarms*
collision warning devices
warning devices
warning signals
GS **warning systems**
. early warning systems
. . Ballistic Missile Early Warning System
. mine detectors
RT accident prevention
auditory signals
avoidance
bells
civil defense
collision avoidance
detection
∞ detectors
display devices
explosions
false alarms
fire prevention
fires
gas detectors
hazards
head-up displays
horns
monitors
National Severe Storms Project
pollution monitoring
protection
public address systems
safety
safety devices
safety management
sanitation
sirens
sound generators
∞ systems
threat evaluation

warpage
RT bending
buckling
camber
damage
deformation
distortion
growth
heaving
plastic deformation
shrinkage
structural strain
surface distortion
thermal expansion
twisting

∞ **washers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT washers (cleaners)
washers (spacers)

washers (cleaners)
RT cleaners
concentrators
extraction
separators
∞ washers
washing

washers (spacers)
GS fasteners
. **washers (spacers)**
RT inserts
separators
spacers
∞ washers

washing
UF *scrubbing*
GS cleaning
. **washing**
. . bathing
RT beneficiation
decontamination
dissolving
distillation
elution
flushing
housekeeping (spacecraft)
purification
scrubbers
∞ separation
washers (cleaners)
waste water

Washington
GS nations
. United States
. . **Washington**
RT Cascade Range (CA-OR-WA)
Columbia River Basin (ID-OR-WA)

washout (radioactivity)
USE **fallout**

WASP sounding rocket
UF *high altitude sounding projectile*
window atmosphere sounding projectile
GS rocket vehicles
. multistage rocket vehicles
. . **WASP sounding rocket**
. sounding rockets
. . **WASP sounding rocket**
RT Loki rocket vehicle
solid propellant rocket engines

Waspaloy
GS alloys
. heat resistant alloys
. . **Waspaloy**
. nickel alloys
. . **Waspaloy**
RT chromium alloys
cobalt alloys
wrought alloys

waste disposal
GS disposal
. **waste disposal**
. . composting
. . hazardous material disposal (in space)
management
. waste management
. . **waste disposal**
. . . composting
. . . hazardous material disposal (in space)
RT air pollution
deep well injection (wastes)
dewatering
dilution

dissipation
drainage
effluents
elimination
environment effects
environment pollution
environment protection
environmental chemistry
environmental engineering
environmental surveys
exhaust gases
exhaust systems
garbage
hazardous materials
hazardous wastes
human wastes
incinerators
industrial wastes
landfills
manures
materials handling
metabolic wastes
mines (excavations)
Modular Integrated Utility System
pipelines
plasma core reactors
pollution
ponds
radioactive wastes
sanitation
sewage
sewage treatment
sewers
soil pollution
solid wastes
space flight feeding
∞ storage
sumps
toilets
utilities
wastes
water pollution

waste energy utilization
GS utilization
. **waste energy utilization**
RT boilers
burners
chimneys
cogeneration
energy conversion
exhaust gases
furnaces
heat transfer
heating
incinerators
lighting equipment
ovens
solid wastes
space heating (buildings)
waste heat
wastes

waste heat
RT energy technology
heat exchangers
heat pumps
waste energy utilization

waste management
(added March 1997)
GS management
. **waste management**
. . waste disposal
. . . composting
. . . hazardous material disposal (in space)
. . waste treatment
. . . sewage treatment
. . waste utilization
RT environment management
environmental engineering
landfills
life support systems
materials recovery
reclamation
recycling
sanitation
underground storage
wastes

waste treatment
DEF The processing of waste materials (liquid and solid) with chemicals, high temperature, chopping, grinding, and filtering equipment, bacterial action, dryers, separators, for conversion to useful products.
GS management
. waste management
. . **waste treatment**
. . . sewage treatment
RT bacteria
composting
garbage
residues
sludge
∞ treatment
wastes

waste utilization
GS management
. waste management
. . **waste utilization**
utilization
. **waste utilization**
RT biomass energy production
composting
hydrocarbon fuel production
industrial wastes
landfills
manures
solid wastes
wastes

waste water
GS wastes
. liquid wastes
. . **waste water**
water
. **waste water**
RT bathing
cleaning
flushing
industrial wastes
residues
washing
water cooled reactors

wastes
GS **wastes**
. garbage
. industrial wastes
. liquid wastes
. . urine
. . waste water
. manures
. metabolic wastes
. . human wastes
. . . feces
. . . urine
. hazardous wastes
. radioactive wastes
. sewage
. solid wastes
RT activated sludge
air pollution
beneficiation
by-products
combustion products
contaminants
debris
effluents
environment effects
exhaust gases
forest fires
fumes
gas recovery
impurities
leakage
losses
nonpoint sources
organic wastes (fuel conversion)
pollution
residues
scrap
sewers
slags
sludge
waste disposal
waste energy utilization
waste management
waste treatment
waste utilization

watches
USE **clocks**

water
DEF Dihydrogen oxide (molecular formula H20). The word is used ambiguously to refer to the chemical compound in general and to its liquid phase; when the former is meant, the term water substance is often used.
GS **water**
. cold water
. deep water
. fresh water
. heavy water
. inland waters
. . ground water
. light water
. nearshore water
. . coastal water
. polywater
. potable water
. sea water
. shallow water
. shoals
. springs (water)
. surface water
. vadose water
. waste water
RT aquifers
arroyos
bay ice
body fluids
cavitation flow
fiords
humidity
hydrates
∞ hydraulics
hydrodynamics
hydrogen bonds
hydrogen compounds
hydrology
hydromechanics
hydrostatics
ice
isthmuses
Lake Erie

Lake Huron
lake ice
Lake Michigan
Lake Ontario
Lake Superior
laterites
life support systems
limnology
liquids
moderators
moisture
moisture content
muskegs
oxides
peninsulas
pollution
precipitation (meteorology)
runway conditions
slush
sounds (topographic features)
steam
straits
utilities
water splitting
watersheds
wharves
windpowered pumps

water balance
GS balance
. material balance
. . **water balance**
RT body fluids
edema
∞ equilibrium
homeostasis
hydrometeorology
lysimeters
osmosis
urination

water circulation
GS circulation
. **water circulation**
. . water currents
. . . ocean currents
. . . . coastal currents
. . . . el Nino
. . . . Gulf Stream
. . . . Lomonosov current
RT lakes
oceanography
pollution transport
wind effects

water color
GS electromagnetic properties
. optical properties
. . color
. . . **water color**
RT Coastal Zone Color Scanner
dissolved organic matter
lakes
ocean color scanner
oceans
rivers

water consumption
GS consumption
. **water consumption**
RT drought
irrigation
seepage

water content
USE **moisture content**

water cooled reactors
UF *physical constants testing reactor*
GS nuclear reactors
. liquid cooled reactors
. . **water cooled reactors**
. . . boiling water reactors
. . . . experimental boiling water reactors
. . . . Halden Boiling Water Reactor
. . . . Los Alamos Water Boiler Reactor
. . . . Pathfinder nuclear reactor
. . . . Spert reactors
. . . heavy water reactors
. . . . heavy water components test reactors
. . . . plutonium recycle test reactor
. . . . zero power reactor 2
. . . light water reactors
. . . NRX reactors
. . . Plum Brook Reactor
. . . pressurized water reactors
. . . . spectral shift control reactor
. . . swimming pool reactors
. . . zero power reactors
. . . . zero power reactor 2
. . . . zero power reactor 3
. . . . zero power reactor 6
. . . . zero power reactor 9
RT chemical reactors
nuclear engine for rocket vehicles
∞ reactors
waste water

water cooling
USE **liquid cooling**

water currents
DEF Net transport of water along a definable path. Used for currents (oceanography).
UF *currents (oceanography)*
GS circulation
. water circulation
. . **water currents**
. . . ocean currents
. . . . coastal currents
. . . . el Nino
. . . . Gulf Stream
. . . . Lomonosov current
RT arroyos
∞ currents
oceanography
rapids
sea roughness
sea states
surface waves
tides
upstream

water cycle (hydrology)
USE **hydrological cycle**

water deprivation
GS deprivation
. **water deprivation**

water depth
RT cnoidal waves
coastal water
lakes
nearshore water
oceans
shallow water
shoals

water erosion
GS erosion
. **water erosion**
RT arroyos
canyons
drainage patterns
flood damage
rain impact damage
ravines
soil erosion
wind erosion

water flow
GS fluid flow
. liquid flow
. . **water flow**
RT alluvium
canals
drainage
drainage patterns
flood damage
floods
flow measurement
Great Lakes (North America)
ground water
∞ hydraulics
hydrodynamics
hydrology models
open channel flow
pipe flow
rapids
watersheds

water hammer
RT hydraulic equipment
hydrodynamics
pipe flow
pipelines
rams (pumps)
surges
valves

water heating
DEF The heating of water by any means including solar technology.
GS heating
. **water heating**
RT domestic energy
geothermal energy extraction
heat exchangers
∞ heaters
heating equipment
residential energy
temperature control

water immersion
RT baths
liquid cooling
quenching (cooling)
sinking
∞ soaking
submerged bodies
submerging
underwater tests

water injection
GS injection
. fluid injection
. . liquid injection
. . . **water injection**
RT gas injection
perforating
thrust augmentation

∞ **water intakes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT air intakes
intake systems
manifolds
nose inlets
plenum chambers

scoops
side inlets

water jets
USE hydraulic jets

water landing
GS landing
. water landing
. . ditching (landing)
RT aircraft landing
crash landing
glide landings
hard landing
horizontal spacecraft landing
hydroplaning
planetary landing
soft landing
spacecraft landing
spacecraft recovery
splashing
touchdown

water loss
RT dehydration
drying
evaporation
losses

water management
GS management
. water management
RT conservation
drought
environment management
floods
hydrology
Lake Erie
Lake Huron
Lake Michigan
Lake Ontario
Lake Superior
limnology
potable water
Pyramid Lake (NV)
watersheds

water masers
GS emission
. water masers
stimulated emission devices
. masers
. . water masers
RT gas lasers
gas masers
interstellar masers
maser outputs

water moderated reactors
GS nuclear reactors
. water moderated reactors
. . experimental boiling water reactors
. . heavy water components test reactors
. . plutonium recycle test reactor
RT light water reactors

water pollution
GS pollution
. environment pollution
. . water pollution
. . . oil pollution
RT algae
alkalinity
biochemical oxygen demand
clean energy
contamination
dissolved organic matter
drought
environment effects
environment protection
environmental chemistry
environmental quality
environmental surveys
inland waters
landfills
limnology
lysimeters
marine resources
oil slicks
phytoplankton
pollution monitoring
pollution transport
purity
soil pollution
thermal pollution
waste disposal

water pressure
GS pressure
. fluid pressure
. . water pressure
RT∞ hydraulics
hydrodynamics
hydrostatic pressure
hydrostatics
inlet pressure
pipe flow

water purification
USE water treatment

water quality
GS quality
. environmental quality
. . water quality
RT alkalinity
environment effects

water reclamation
UF *water recovery*
GS reclamation
. materials recovery
. . water reclamation
RT conservation
dewatering
drought
pollution

water recovery
USE water reclamation

water resources
GS resources
. Earth resources
. . water resources
. . . aquifers
RT environment effects
environment management
Great Lakes (North America)
ground water
hydrology
inland waters
International Hydrological Decade
lakes
limnology
oceans
ponds
potable water
precipitation (meteorology)
Pyramid Lake (NV)
rainmaking
reservoirs
sea water
underwater resources
wetlands
windpowered pumps

water runoff
RT drainage
ground water
inland waters
resources management
rivers
wadis

water splitting
(added September 1988)
GS splitting
. water splitting
RT electrolysis
hydrogen fuels
hydrogen production
thermochemistry
water

water tables
RT aquifers
drainage
ground water
potable water
springs (water)
vadose water
watersheds

water takeoff and landing aircraft
GS water takeoff and landing aircraft
. seaplanes
RT∞ aircraft
amphibious aircraft
antisubmarine warfare aircraft
commercial aircraft
ground effect machines
hovercraft ground effect machines
light aircraft
monoplanes
passenger aircraft
reconnaissance aircraft
S-61 helicopter
sea launching
submersible aircraft
∞ subsonic aircraft
transport aircraft
utility aircraft

water temperature
GS temperature
. water temperature
. . ocean temperature
. . . sea surface temperature
RT surface temperature
temperature distribution
thermal pollution

water treatment
UF *water purification*
RT activated carbon
adsorption
aeration
agitation
bentonite
biochemical oxygen demand
chlorination
coagulation
contaminants
corrosion prevention
demineralizing
desalinization
filtration
flocculating
flotation
ion exchanging
material absorption
pollution

potable water
purification
∞ screening
settling
sewage
∞ treatment

water tunnel tests
RT air water interactions
cross flow
flow distribution
flow visualization
strakes
∞ tests
water waves
wind tunnel tests

water tunnels
USE hydraulic test tunnels

water vapor
DEF Water (H20) in gaseous form. Also called aqueous vapor.
GS vapors
. **water vapor**
RT atmospheric moisture
dew
humidity
mixing ratios
moisture
moisture content
steam

water vehicles
GS **water vehicles**
. boats
. . lifeboats
. captured air bubble vehicles
. ships
. . Advanced Range Instrumentation Ship
. . aircraft carriers
. . cargo ships
. . . Savannah nuclear ship
. . . tanker ships
. . nuclear powered ships
. . . Savannah nuclear ship
. . satellite communications ships
. . submarines
. . . ballistic missile submarines
. . . guided missile submarines
. . . trident submarine
. . surface effect ships
. . SWATH (ship)
. underwater vehicles
. . submarines
. . . ballistic missile submarines
. . . guided missile submarines
. . . trident submarine
. . underwater research laboratories
RT amphibious vehicles
harbors
marine transportation
∞ military vehicles
research vehicles
shipyards
surface vehicles
∞ vehicles

water waves
GS **water waves**
. tidal waves
RT breakwaters
capillary waves
cnoidal waves
elastohydrodynamics
frontal waves
gravity waves
hydrodynamic coefficients
littoral transport
ocean dynamics
ripples
sea roughness
sea states
surface waves
tsunami waves
water tunnel tests
waterwave energy
waterwave energy conversion
waterwave powered machines
∞ waves

water wheels
GS wheels
. **water wheels**
RT hydroelectric power stations
turbine wheels

waterfowl
GS animals
. vertebrates
. . birds
. . . **waterfowl**
RT beaches
coastal ecology
marine biology
marine environments
marshlands
migration
oceanography
wetlands

waterproofing
RT barrier layers
caulking
coatings
insulation
moisture resistance
protective coatings
sealing
weatherproofing

watersheds
UF *catchment areas*
GS landforms
. structural basins
. . **watersheds**
RT divides (landforms)
drainage patterns
flood control
floods
hydrogeology
hydrology
International Hydrological Decade
Missouri River Basin (US)
mountains
ponds
precipitation (meteorology)
rain
river basins
rivers
storms (meteorology)
valleys
water
water flow
water management
water tables

waterwave energy
RT clean energy
Earth resources
∞ energy
oceanography
tidepower

waterwave energy conversion
GS energy conversion
. **waterwave energy conversion**
RT ∞ conversion
Earth resources
energy conversion efficiency
∞ energy sources
ocean currents
ocean surface
oceanography
oceans
sea roughness
tide powered generators
tide powered machines
tidepower
tides
water waves

waterwave powered machines
RT ∞ machinery
ocean currents
ocean surface
sea roughness
tide powered generators
tide powered machines
tidepower
tides
water waves

waterways
DEF Navigable streams or canals; also channels for the passage or escape of water.
GS **waterways**
. canals
. harbors
. . artificial harbors
RT lakes
rivers
straits

wattmeters
DEF Instruments for measuring the magnitude of the active power in an electric circuit. They are provided with a scale usually graduated in either watts, kilowatts, or megawatts. If the scale is graduated in kilowatts or megawatts, the instruments are usually designated as kilowatt-meters or megawattmeters.
GS measuring instruments
. **wattmeters**
RT electrical measurement
electrometers

wave amplification
GS amplification
. **wave amplification**
RT baroclinic waves
electromagnetic radiation
∞ waves

wave attenuation
GS attenuation
. **wave attenuation**
. . acoustic attenuation
. . . shock wave attenuation
. . radar attenuation
. . radio attenuation
RT atmospheric attenuation
electromagnetic absorption
electromagnetic missiles
infrared absorption
radar transmission
radio transmission
shock wave propagation

wave degradation
GS degradation
. **wave degradation**
RT attenuation
electromagnetic missiles
scattering
shock wave interaction

wave diffraction
GS diffraction
. **wave diffraction**
RT attenuation
crosstalk
diffraction radiation
Fresnel integrals
geometrical theory of diffraction
holographic optical elements
∞ interference
traveling wave modulation

wave dispersion
RT acoustic properties
atmospheric refraction
attenuation
∞ coherence
color
deflection
diffraction
∞ dispersion
elastic waves
electromagnetic radiation
fading
light transmission
optical paths
optical properties
radiation distribution
radio wave refraction
refraction
scattering
sound–sound interactions
transmission
transmission loss

wave drag
GS dynamic characteristics
. **drag**
. . pressure drag
. . . **wave drag**
. . . . interference drag
RT friction drag
supersonic drag

wave equations
SN (NOT EQUATIONS OF MOTION)
GS **wave equations**
. Dirac equation
. eikonal equation
. Klein–Gordon equation
. Korteweg–Devries equation
. Lame wave equations
. Schroedinger equation
RT Boltzmann–Vlasov equation
density wave model
∞ equations
forbidden bands
∞ Helmholtz equations
hyperbolic differential equations
partial differential equations
quantum theory

wave excitation
GS excitation
. **wave excitation**
. . acoustic excitation
. . harmonic excitation
RT diffraction radiation
stroking tests
∞ waves

wave front deformation
GS deformation
. **wave front deformation**
RT ∞ interference

wave front reconstruction
GS reconstruction
. **wave front reconstruction**
RT acoustical holography
diffractometers
holographic interferometry
holographic spectroscopy
holography
kinoform
microwave holography
photography
white light holography

wave fronts
DEF A continuous surface drawn through the most forward points in wave distrubances that have the same phase.
GS **wave fronts**
. shock fronts
RT caustic lines
eikonal equation
∞ fronts
Huygens principle
phase coherence
phase velocity
shock discontinuity
∞ waves

wave functions
GS **wave functions**
. molecular orbitals
. Pauli exclusion principle
RT forbidden transitions
Hartree approximation
perturbation theory
square waves
time functions

wave generation
RT electromagnetic radiation
function generators
∞ generators
harmonic generations
shock wave generators

wave incidence control
RT ∞ control
incident radiation

wave interaction
GS **wave interaction**
. shock wave interaction
. wave–particle interactions
RT acoustic coupling
coupling
damping
electroacoustic waves
electromagnetic interactions
four-wave mixing
∞ interactions
intermodulation
modulation
orthogonal multiplexing theory
plasma interactions
propagation modes
scattering
shock wave luminescence
shock wave profiles
shock wave propagation

wave motion
USE **waves**

wave oscillators
USE **oscillators**

wave packets
RT longitudinal waves
packets (communication)
plasma waves
quantum mechanics
transverse waves

wave propagation
UF *Kirchhoff–Huygens principle*
GS transmission
. **wave propagation**
. . acoustic propagation
. . . sound propagation
. . diffraction propagation
. . ground wave propagation
. . ionospheric propagation
. . . ionospheric F–scatter propagation
. . light scattering
. . . halos
. . scatter propagation
. . . ionospheric F–scatter propagation
. . shock wave propagation
. . transequatorial propagation
RT acoustic attenuation
acoustic microscopes
atmospheric attenuation
attenuation
automatic picture transmission
beam waveguides
∞ coherence
coherent radiation
∞ conduction
diffraction
double sideband transmission
electromagnetic absorption
electromagnetic missiles
electromagnetic wave transmission
geometrical acoustics
group velocity
Huygens principle
hydraulic analogies
ion acoustic waves
Lame wave equations
light transmission
lossy media
microwave attenuation
microwave transmission
multipath transmission
nonadiabatic theory
phase velocity
plasma acceleration
plasmaguides
∞ propagation
propagation modes
propagation velocity
pulse diffraction
radar attenuation
radar transmission
radio attenuation
radio transmission
refraction
Sagnac effect
screen effect
shock fronts
shock wave attenuation
short wave radio transmission
single sideband transmission
sound transmission
square waves
stress waves
television transmission
waveforms
whispering gallery modes
Whitham rule

wave radiation
USE **electromagnetic radiation**

wave reflection
GS reflection
. **wave reflection**
. . Mach reflection
RT ground effect (communications)
reflected waves
signal reflection
spread reflection

wave resistance
RT blast loads
erosion
impact strength
∞ resistance
structural stability

wave scattering
GS scattering
. **wave scattering**
. . acoustic scattering
. . . reverberation
. . atmospheric scattering
. . . tropospheric scattering
. . electromagnetic scattering
. . . ionospheric F-scatter propagation
. . . light scattering
. . . . halos
. . . microwave scattering
. . . Mie scattering
. . . . Rayleigh scattering
. . . Raman spectra
. . . Thomson scattering
. . . x ray scattering
RT Faddeev equations
magnetic dispersion
reciprocity theorem
scattering amplitude
scatterometers
shock fronts

wave-particle interactions
(added July 1991)
GS particle interactions
. **wave-particle interactions**
wave interaction
. **wave-particle interactions**
RT beam interactions
electromagnetic interactions
electrostatic waves
magnetohydrodynamic waves
magnetohydrodynamics
particle acceleration
plasma acceleration
plasma interactions
plasma waves
plasma-electromagnetic interaction
plasma-particle interactions
space plasmas

waveforms
DEF The graphical representations of waves, showing variation of amplitude with time.
GS **waveforms**
. pulse amplitude
. pulse duration
. sawtooth waveforms
. square waves
RT form factors
speech baseband compression
time functions
wave propagation

waveguide antennas
GS antennas
. **waveguide antennas**
. . horn antennas
RT lens antennas
microstrip antennas
microwave antennas
monopulse antennas
radant
slot antennas
Yagi antennas

waveguide filters
GS electromagnetic wave filters
. electric filters
. . **waveguide filters**
RT bandstop filters
microwave filters
radar filters
waveguides

waveguide lasers
DEF Pump sources for deuterium oxide lasers
GS stimulated emission devices
. lasers
. . **waveguide lasers**
. . . fiber lasers
RT aluminum gallium arsenide lasers
carbon dioxide lasers
gallium arsenide lasers
heterojunction devices
infrared lasers
laser modes
laser outputs
optical waveguides
pulsed lasers
quantum well lasers
semiconductor lasers
surface emitting lasers
tube lasers

waveguide tuners
GS tuners
. **waveguide tuners**
RT impedance matching
mode transformers
yttrium-iron garnet

waveguide windows
RT impedance matching
irises (mechanical apertures)
∞ windows

waveguides
GS **waveguides**
. beam waveguides
. circular waveguides
Earth-ionosphere waveguide
. optical waveguides
. . optical fibers
. . . scintillating fibers
. plasmaguides
. rectangular waveguides
RT antenna feeds
coaxial cables
communication cables
crossed fields
electromagnetic surface waves
gyrators
irises (mechanical apertures)
microwave switching
microwave transmission
parallel plates
plastic fibers
propagation modes
Smith chart
transmission lines
waveguide filters

wavelength division multiplexing
DEF The process in which each modulating wave modulates a separate subcarrier and the subcarriers are spaced in wavelengths. This term is used in optical communication where wavelength usage is preferred over frequency.
GS transmission
. multiplexing
. . **wavelength division multiplexing**
RT code division multiplexing
demultiplexing
frequency division multiplexing
orthogonal multiplexing theory
time division multiplexing

wavelengths
DEF Distance in the direction of propagation of a periodic wave between two successive points at which the phase is the same (at the same time).
GS **wavelengths**
. de Broglie wavelengths
RT antinodes
harmonics
infrared radiation
laser modes
laser outputs
longitudinal waves
maser outputs
millimeter waves
nodes (standing waves)
spectral emission
standing waves
Stokes law of radiation
submillimeter waves
whispering gallery modes

wavelet analysis
(added September 1993)
UF *wavelet transform*
RT cosine series
Fourier analysis
Fourier transformation
functions (mathematics)
image processing
orthonormal functions
signal analysis
signal encoding
signal processing
sine waves
time functions
transformations (mathematics)
∞ **waves**

wavelet transform
USE **wavelet analysis**

waveriders
GS aerodynamic configurations
. **waveriders**
RT airfoils
caret wings
delta wings
hypersonic flight
hypersonic vehicles
lifting bodies

∞ **waves**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *crests*
wave motion
RT baroclinic waves
breakwaters
cnoidal waves
corrugating
cylindrical waves
detonation waves

dilatational waves
eikonal equation
elastic waves
electroacoustic waves
electromagnetic radiation
electromagnetic surface waves
frontal waves
gravitational waves
internal waves
ionic waves
Kelvin waves
kilometric waves
littoral transport
longitudinal waves
nodes (standing waves)
plane waves
planetary waves
refracted waves
seismic waves
SH waves
shock waves
sine waves
sound waves
spherical waves
square waves
standing waves
stress waves
surface waves
surges
tidal waves
transverse waves
tropospheric waves
vibration
water waves
waterwave energy
wave amplification
wave excitation
wave fronts
wavelet analysis

waxes
GS **waxes**
. ceresin
RT alkanes
coatings
crude oil
finishes
phase change materials

weak energy interactions
GS decay
. **weak energy interactions**
. . weak interactions (field theory)
particle interactions
. elementary particle interactions
. . **weak energy interactions**
. . . weak interactions (field theory)
RT beta particles
grand unified theory
gravitinos
∞ interactions
particle theory

weak interactions (field theory)
DEF One class of the fundamental interactions among elementary particles responsible for beta decay of nuclei, and for the decay of elementary particles with lifetimes greater than about 10^{-10} seconds such as muons, K mesons, and lambda hyperons; it is several orders of magnitude weaker than the strong and electromagnetic interactions and fails to conserve strangeness or parity. Used for beta interactions.
UF *beta interactions*
GS decay
. weak energy interactions
. . **weak interactions (field theory)**
nuclear reactions
. nuclear interactions
. . **weak interactions (field theory)**
particle interactions
. elementary particle interactions
. . weak energy interactions
. . . **weak interactions (field theory)**
. nuclear interactions
. . **weak interactions (field theory)**
RT electroweak interactions (field theory)
electroweak model
field theory (physics)
grand unified theory
∞ interactions
standard model (particle physics)
strong interactions (field theory)
∞ theories

weapon system 107A-1
GS weapon systems
. **weapon system 107A-1**

weapon system 107A-2
GS weapon systems
. **weapon system 107A-2**

weapon system 133A
GS weapon systems
. **weapon system 133A**

weapon system 133B
GS weapon systems
. **weapon system 133B**

weapon system 315A
GS weapon systems
. **weapon system 315A**

weapon system management
GS management
. **weapon system management**
RT project management
∞ systems

weapon systems
DEF A combination of one or more weapons with all related equipment, materials, services, personnel, and means of delivery and deployment (if applicable) required for self-sufficiency.
GS **weapon systems**
. ground operational support system
. laser weapons
. missile systems
. . Nike X systems
. . Safeguard system
. Sentinel system
. Success project
. Typhon weapon system
. weapon system 107A-1
. weapon system 107A-2
. weapon system 133A
. weapon system 133B
. weapon system 315A
RT air to surface missiles
antiship missiles
fire control
Harpoon missile
∞ military aircraft
military spacecraft
missile launchers
missiles
mobile missile launchers
nuclear weapons
ordnance
∞ rockets
space weapons
∞ systems
weapons
weapons development

weapons
GS **weapons**
. guns (ordnance)
. . artillery
. . . howitzers
. . . precision guided projectiles
. . rifles
. laser weapons
. mines (ordnance)
. nuclear weapons
. . fission weapons
. . fusion weapons
. space weapons
. warheads
. . nuclear warheads
. . precision guided projectiles
RT ammunition
antiquities
antiship warfare
armed forces (foreign)
armed forces (United States)
∞ ballistic vehicles
disarmament
fire control
gunnery training
military technology
missiles
ordnance
Patriot missile
projectiles
shaped charges
shrapnel
tanks (combat vehicles)
Tomahawk missiles
torpedoes
weapon systems
weapons delivery
wing-fuselage stores

weapons delivery
DEF Total requirements for locating the target, establishing the release conditions, and maintaining to the target (if required); includes the detection, recognition, and acquisition of the target, the weapons release as well as guidance.
GS delivery
. **weapons delivery**
RT air defense
∞ aircraft
defense program
military technology
missile defense
nuclear weapons
∞ rockets
space weapons
weapons

weapons development
GS product development
. **weapons development**
RT research and development
weapon systems

weapons industry
GS industries
. defense industry
. . **weapons industry**
RT armed forces (United States)
military technology

wear
DEF Damage to a solid surface, generally involving progressive loss of material, due to relative motion between that surface and a contacting substance or substances.
RT abrasion

chipping
corrosion
damage
depreciation
deterioration
durability
erosion
failure
flaking
fretting corrosion
friction
grinding (material removal)
hardness
removal
scoring
sliding friction
spalling
surface finishing
∞ surfaces
system failures
tribology
wear resistance

wear inhibitors
GS inhibitors
. **wear inhibitors**
RT retardants
wear resistance

wear resistance
GS mechanical properties
. **wear resistance**
. . abrasion resistance
RT abrasion
boundary lubrication
coefficient of friction
deterioration
hardness
lubricant tests
∞ resistance
sliding friction
toughness
wear
wear inhibitors
wear tests

wear tests
RT cumulative damage
destructive tests
erosion
ferrography
fretting
friction
hardness tests
∞ materials tests
quality control
spalling
static tests
∞ tests
wear resistance

weather
UF *weather conditions*
GS **weather**
. cold weather
. hot weather
RT aircraft accidents
aircraft hazards
aircraft safety
Alpine meteorology
annual variations
anvil clouds
Atmospheric & Oceanographic Inform Sys
atmospheric pressure
atmospheric temperature
cap clouds
cirrocumulus clouds
cirrostratus clouds
climate
climatology
clouds (meteorology)
flight hazards
flight plans
Global Atmospheric Research Program
long term effects
meteorological parameters
meteorology
METEOSAT satellite
navigation aids
precipitation (meteorology)
runway conditions
seasons
solar compasses
solar terrestrial interactions
wind (meteorology)

weather charts
USE **meteorological charts**

weather conditions
USE **weather**

weather control
USE **weather modification**

weather data recorders
GS data recorders
. **weather data recorders**
measuring instruments
. meteorological instruments
. . **weather data recorders**
recording instruments
. **weather data recorders**
RT automatic weather stations
∞ data
telemetry

weather forecasting
GS forecasting
. **weather forecasting**
. . long range weather forecasting
. . nowcasting
. . numerical weather forecasting
. . statistical weather forecasting
meteorology
. **weather forecasting**
. . long range weather forecasting
. . nowcasting
. . numerical weather forecasting
. . statistical weather forecasting
RT air masses
atmospheric models
cirrus shields
cloud cover
cockpit weather information systems
cold fronts
environmental monitoring
flight conditions
fluid predictions
GARP Atlantic Tropical Experiment
humidity
meteorological balloons
meteorological flight
meteorological radar
meteorological satellites
meteorological services
nephanalysis
precipitation (meteorology)
snowstorms
storms
storms (meteorology)
synoptic meteorology
warm fronts
wind (meteorology)

weather fronts
USE **fronts (meteorology)**

weather maps
USE **meteorological charts**

weather modification
UF *weather control*
GS **weather modification**
. cloud dispersal
. cloud seeding
. fog dispersal
. lightning suppression
. rainmaking
. storm enhancement
. storm suppression
RT artificial clouds
cloud physics
∞ control
environmental control
heat islands
snowstorms

weather radar
USE **meteorological radar**

weather reconnaissance aircraft
GS reconnaissance aircraft
. **weather reconnaissance aircraft**
RT ∞ aircraft
Global Atmospheric Research Program
meteorological instruments
observation aircraft

weather stations
UF *meteorological stations*
GS stations
. **weather stations**
. . automatic weather stations
RT ground stations
instrument packages
Integrated global ocean station systems
meteorological instruments
meteorological satellites
meteorological services
ocean data acquisitions systems

weathering
DEF The process of disintegration and decomposition as a consequence of exposure to the atmosphere, to chemical action, and to the action of frost water and heat.
RT corrosion
corrosion tests
curing
damage
degradation
deterioration
Earth atmosphere
erosion
exposure
mechanical properties
rusting
soil erosion

weatherproofing
RT coatings
cold weather
corrosion prevention
moisture resistance
packaging
preserving
waterproofing

weaving
RT fabrics
sewing

woven composites

webbing
RT fabrics
mesh
∞ webs
webs (sheets)

Weber test
GS physiological tests
. **Weber test**
RT auditory perception
binaural hearing

Weber–Fechner law
DEF An approximate psychological law relating the degree of response or sensation of a sense organ and the intensity of the stimulus. The law asserts that equal increments of sensation are associated with equal increments of the logarithm of the stimulus, or that the just noticeable difference in any sensation results from a change in the stimulus which bears a constant ratio to the value of the stimulus.
GS laws
. **Weber–Fechner law**

∞ **webs**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT membranes
mesh
webbing
webs (sheets)
webs (supports)

webs (membranes)
USE **membranes**

webs (sheets)
SN (EXCLUDES POLYMERIC FILMS AND STRUCTURAL REINFORCEMENTS)
RT diaphragms (mechanics)
elastic sheets
fabrics
∞ films
membranes
netting (materials/structures)
paper (material)
papers
∞ rovings
∞ sheets
webbing
∞ webs
webs (supports)

webs (supports)
GS **webs (supports)**
. girder webs
RT diaphragms (mechanics)
elastic sheets
membrane structures
membranes
ribs (supports)
skin (structural member)
stiffening
∞ webs
webs (sheets)

wedge flow
GS fluid flow
. **wedge flow**
RT Blasius flow
conical flow
Falkner–Skan equation
flow geometry
laminar flow
shock waves
supersonic flow
three dimensional flow
two dimensional flow
viscous flow

wedges
RT aerodynamic configurations
airfoil profiles
airfoils

Weibel instability
DEF An instability of collisionless plasmas characterized by the unstable growth of transverse electromagnetic waves and large magnetic field fluctuation brought about by an anisotropic distribution of electronic velocities.
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . flow stability
. . . . magnetohydrodynamic stability
. . . . . **Weibel instability**
. flow characteristics
. . flow stability
. . . magnetohydrodynamic stability
. . . . **Weibel instability**
stability
. dynamic stability
. . motion stability
. . . flow stability
. . . . magnetohydrodynamic stability
. . . . . **Weibel instability**
RT plasma interactions

Weibull density functions
GS functions (mathematics)
. probability density functions
. . **Weibull density functions**
statistical analysis
. probability density functions
. . **Weibull density functions**
RT exponential functions
fatigue tests
sampling

Weierstrass functions
GS analysis (mathematics)
. real variables
. . **Weierstrass functions**
RT elliptic functions
Jacobi integral

∞ **weight**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
DEF The force exerted on a body by gravity.
RT atomic weights
biomass
coefficients
payloads
weight (mass)

weight (mass)
UF *weight factors*
GS **weight (mass)**
. atomic weights
. biomass
. body weight
. organ weight
. structural weight
RT center of mass
∞ force
gravitation
loads (forces)
low molecular weights
masconi
mass
molecular weight
payloads
pressure
volume
∞ weight

weight analysis
RT ∞ analyzing
NEW MOONS project
preflight analysis
structural weight
systems analysis

weight factors
USE **weight (mass)**

weight indicators
UF *wind tunnel balances*
GS measuring instruments
. indicating instruments
. . **weight indicators**
. . . microbalances
. . . strain gage balances
. . . thermobalances
RT balance
mechanical measurement
pressure gages
pressure measurement
∞ scale
strain gages
tensometers

weight measurement
UF *microweighing*
RT density (mass/volume)
hydrometers
∞ measurement

weight reduction
RT aircraft design
spacecraft design
structural design
structural weight
systems analysis

weighting functions
GS analysis (mathematics)
. real variables
. . measure and integration
. . . **weighting functions**
functions (mathematics)
. **weighting functions**
RT statistical mechanics

weightless fluids
RT ∞ fluids
viscous fluids

weightlessness
DEF A condition in which no acceleration, whether of gravity or other force, can be detected by an observer within the system in question. Used for zero gravity.
UF *zero gravity*
RT aerospace medicine
artificial gravity
astronaut performance
∞ astronautics
bioprocessing
blackout prevention
body weight
bone demineralization
containerless melts
disorientation
drop towers
electrolyte metabolism
environments
extravehicular activity
flight stress (biology)
free fall
gravitation

gravitational effects
intravehicular activity
life support systems
low weight
lower body negative pressure
microgravity
neutral buoyancy simulation
parabolic flight
space adaptation syndrome
space flight stress
space manufacturing
Space Processing Applications Rocket
spaceborne experiments
spacecraft environments
suborbital flight

weightlessness simulation
GS simulation
. environment simulation
. . space environment simulation
. . . **weightlessness simulation**
. . . . neutral buoyancy simulation
RT flight simulation
head down tilt
Langley complex coordinator
parabolic flight
submerging

Weinberg–Salam Gauge Model
USE **electroweak model**

weld strength
GS mechanical properties
. **weld strength**
RT ∞ strength
weldability
welded joints

weld tests
RT fatigue tests
∞ **tests**
welded joints

weldability
RT brittleness
ductility
heat affected zone
weld strength

welded joints
GS joints (junctions)
. metal joints
. . **welded joints**
. . . spot welds
RT beads
bonded joints
butt joints
lap joints
riveted joints
weld strength
weld tests
welding

welded structures
GS **welded structures**
. steel structures
RT rigid structures
∞ structures

welding
DEF Joining two or more pieces of metal by applying heat, pressure, or both, with or without filler material to produce a localized union through fusion or recrystallization across the interface.
GS **welding**
. fusion welding
. . electric welding
. . . arc welding
. . . . gas tungsten arc welding
. . . . plasma arc welding
. . . electroslag welding
. . . flash welding
. . electron beam welding
. . gas welding
. . . brazing
. . . . low temperature brazing
. . laser welding
. pressure welding
. . cold welding
. . diffusion welding
. . explosive welding
. . friction welding
. . ultrasonic welding
RT backups
beads
bonding
construction
fillets
flame plating
fluxes
fusibility
heat affected zone
∞ joining
metal bonding
metal–metal bonding
sealing
soldering
torches
welded joints

welding machines
RT ∞ electric equipment
electric welding
∞ machinery
torches

wells
RT aquifers
drilling
ground water
limnology
oases
springs (water)
square wells
stratigraphy

Wentzel–Kramer–Brillouin method
UF *WKB approximation*
RT de Broglie wavelengths
∞ methodology
perturbation theory
Plancks constant
Schroedinger equation

Wesser aircraft
RT ∞ aircraft
helicopters
rotary wing aircraft
V/STOL aircraft

West comet
DEF A comet discovered in 1976.
GS celestial bodies
. comets
. . **West comet**
RT solar system

West Ford project
GS programs
. projects
. . **West Ford project**

West Germany
UF *Federal Republic of Germany*
GS nations
. **West Germany**
RT Alps Mountains (Europe)
Azur satellite
Central Europe
East Germany
Europe
German Infrared Laboratory
German space program
Germany

West Indies
GS landforms
. islands
. . **West Indies**
. . . Antigua and Barbuda
. . . Bahamas
. . . Barbados
. . . Cuba
. . . Dominica
. . . Grenada
. . . Guadeloupe
. . . Haiti
. . . Jamaica
. . . Lesser Antilles
. . . Martinique
. . . Puerto Rico
. . . Trinidad and Tobago
. . . Virgin Islands
RT Atlantic Ocean
Caribbean region

West Virginia
GS nations
. United States
. . **West Virginia**
RT Allegheny Plateau (US)
Ohio River (US)
Potomac River Valley (MD–VA–WV)

Westar satellites
GS artificial satellites
. communication satellites
. . **Westar satellites**
RT point to point communication
telecommunication
telegraph systems

Western hemisphere
RT Earth (planet)
Eastern Hemisphere
geography

Westland aircraft
GS **Westland aircraft**
. P-531 helicopter
. Westland Whirlwind helicopter
RT ∞ aircraft
helicopters
rotary wing aircraft
V/STOL aircraft

Westland ground effect machines
UF *SR–N2 ground effect machine*
SR–N3 ground effect machine
SR–N5 ground effect machine
Westland SR–N2 ground effect machine
Westland SR–N2 hovercraft
Westland SR–N3 ground effect machine
Westland SR–N3 hovercraft
Westland SR–N5 ground effect machine
GS ground effect machines
. **Westland ground effect machines**
RT ∞ aircraft

Westland MK–10 helicopter
USE **Westland Whirlwind helicopter**

Westland P-531 helicopter
USE **P-531 helicopter**

Westland SR-N2 ground effect machine
USE **Westland ground effect machines**

Westland SR-N2 hovercraft
USE **Westland ground effect machines**

Westland SR-N3 ground effect machine
USE **Westland ground effect machines**

Westland SR-N3 hovercraft
USE **Westland ground effect machines**

Westland SR-N5 ground effect machine
USE **Westland ground effect machines**

Westland Whirlwind helicopter
UF *Westland MK-10 helicopter*
Whirlwind MK-10 helicopter
GS V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **Westland Whirlwind helicopter**
Westland aircraft
. **Westland Whirlwind helicopter**
RT ∞ aircraft

wet cells
GS electrochemical cells
. electric batteries
. . **wet cells**
RT ∞ electric cells
electrolytes
fuel cells
nonaqueous electrolytes
primary batteries

wet spinning
DEF The production of synthetic and man-made filaments by extruding the chemical solution through spinnerets into a chemical bath where they coagulate.
RT extruding
fibers
∞ filaments
∞ processing
synthetic fibers
textiles
wetting

wetlands
DEF Lands which have the water table at, near, or above the land surface, or which are saturated for long enough periods to promote hydrophytic vegetation and various kinds of biological activity which are adapted to the wet environment.
GS land
. **wetlands**
. . marshlands
RT coastal currents
coastal ecology
coastal plains
coastal water
environment effects
fisheries
marine biology
marine environments
marine resources
nearshore water
oceanography
oil pollution
sea grasses
shorelines
tides
water resources
waterfowl
wildlife

wetness
USE **moisture content**

wettability
RT adhesion
adhesion tests
formations
hygroscopicity
permeability
porosity
surface properties
wetting

wetting
RT cooling
dipping
foaming
interfacial tension
∞ saturation
∞ soaking
soaps
spraying
sprinkling
submerging
wet spinning
wettability

whales
GS animals
. vertebrates
. . mammals
. . . marine mammals
. . . . **whales**

wharves
UF *piers*
RT cargo ships
dams
Earth resources
freighters
harbors
marine technology
materials handling
∞ ports
rivers
ship terminals
tanker ships
terminal facilities
water

wheat
GS farm crops
. grains (food)
. . **wheat**
RT crop growth
crop vigor
∞ crops
rice

Wheatstone bridges
GS circuits
. electric bridges
. . wire bridge circuits
. . . **Wheatstone bridges**
RT measuring instruments
ohmmeters

wheel brakes
GS brakes (for arresting motion)
. **wheel brakes**
RT aircraft brakes
aircraft safety
antiskid devices
controllability
friction
hydraulic equipment
landing gear
tires
vehicle wheels

wheelchairs
DEF Four wheeled ambulatory devices for persons with minimal or no use of lower extremities which can be either manually or electrically powered. They are often individually fitted.
RT disabilities
human factors engineering
locomotion
ramps (structures)

wheels
DEF Rims fitted with disks for affixment to axles.
GS **wheels**
. counter-rotating wheels
. **flywheels**
. reaction wheels
. toroidal wheels
. turbine wheels
. vehicle wheels
. . nose wheels
. water wheels
RT bearings
brakes (for arresting motion)
gears
hubs
landing gear
pulleys
rollers
rotors
shafts (machine elements)
spokes
tires

whip antennas
DEF Thin flexible monopole antennas.
GS antennas
. omnidirectional antennas
. . monopole antennas
. . . **whip antennas**
RT radio antennas

whiplash injuries
GS injuries
. **whiplash injuries**
RT back injuries
crash injuries

whirl
USE **rotation**

whirl instability
USE **rotary stability**

whirl towers
RT helicopter design
hovering
hovering stability
parachutes
rotary wings
rotor aerodynamics
spin tests

whirling
USE **rotation**

whirling tests
USE **spin tests**

Whirlwind MK-10 helicopter
USE **Westland Whirlwind helicopter**

whisker composites
UF *metal whisker reinforcement*
GS composite materials

. **whisker composites**
RT aramid fiber composites
eutectic alloys
metal matrix composites
reinforcing fibers

whiskers (crystals)
GS crystals
. **whiskers (crystals)**
RT dendritic crystals
fibers
∞ filaments

whispering gallery modes
(added September 1988)
DEF Electromagnetic (or elastic) waves that differ in frequency by more than an order of magnitude.
GS modes
. propagation modes
. . **whispering gallery modes**
RT acoustic frequencies
acoustic propagation
electromagnetic radiation
electromagnetic wave transmission
wave propagation
wavelengths

whistler recorders
GS communication equipment
. radio receivers
. . **whistler recorders**
radio equipment
. radio receivers
. . **whistler recorders**
receivers
. radio receivers
. . **whistler recorders**
recording instruments
. **whistler recorders**
RT sonograms

whistlers
DEF Radiofrequency electromagnetic signals generated by some lightning discharges.
GS atmospheric radiation
. ionospheric noise
. . **whistlers**
electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . atmospherics
. . . . **whistlers**
. . . ionospheric noise
. . . . **whistlers**
electromagnetic radiation
. radio waves
. . sky waves
. . . **whistlers**
RT dawn chorus
electromagnetic fields
lightning
microwaves
radio signals
sonograms

white blood cells
USE **leukocytes**

white dwarf stars
GS celestial bodies
. stars
. . early stars
. . . hot stars
. . . . **white dwarf stars**
RT cataclysmic variables
degenerate matter
dwarf novae
dwarf stars
red dwarf stars
subdwarf stars
supernova remnants
Wolf–Rayet stars

white holes (astronomy)
DEF Time-reversed black holes, expanding sources with growing intensity and photon energy.
GS celestial bodies
. stars
. . **white holes (astronomy)**
RT black holes (astronomy)
cosmology
electromagnetic radiation
event horizon
gravitational collapse
gravitational lenses
light emission
naked singularities
supernova remnants

white light holography
GS imagery
. photography
. . holography
. . . **white light holography**
RT data storage
holographic optical elements
wave front reconstruction

white noise
DEF A sound or electromagnetic wave whose spectrum is continuous and uniform as a function of frequency. Used for spectral noise.
UF *spectral noise*
GS electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . **white noise**
. . . . thermal noise
RT electromagnetic noise measurement
jamming
∞ noise
noise (sound)
noise spectra
random noise
signal to noise ratios
spectral bands

whiteout
RT visibility
visual flight

Whitham rule
GS rules
. **Whitham rule**
RT shock waves
wave propagation

Whittaker functions
GS analysis (mathematics)
. real variables
. . **Whittaker functions**
functions (mathematics)
. **Whittaker functions**
RT differential equations

wicks
RT fuses (ordnance)

wide angle lenses
GS lenses
. **wide angle lenses**
optical equipment
. **wide angle lenses**
RT all sky photography
cameras
panoramic cameras

wide area networks
(added August 1995)
UF *WAN*
GS networks
. communication networks
. . **wide area networks**
. computer networks
. . **wide area networks**
RT distributed processing
local area networks
packets (communication)
telecommunication

wideband
USE **broadband**

wideband communication
GS telecommunication
. **wideband communication**
RT broadband amplifiers
code division multiple access
multiple access
point to point communication
time division multiple access
tropospheric scattering

Widmanstatten structure
GS crystal structure
. **Widmanstatten structure**
microstructure
. **Widmanstatten structure**
RT iron meteorites
metallography
meteoritic microstructures
∞ patterns

width
GS dimensions
. **width**
RT bandwidth
∞ span

Wiener filtering
RT electric filters
optimization
statistical analysis

Wiener Hopf equations
GS analysis (mathematics)
. functional analysis
. . integral equations
. . . **Wiener Hopf equations**
RT ∞ equations

wiggler magnets
DEF Components used in the production of coherent x rays by the pumping of a gas with synchrotron radiation in combination with low energy photon beams.
GS magnets
. **wiggler magnets**
reflectors
. **wiggler magnets**
RT diffraction radiation
free electron lasers
laser pumping
tunable lasers

Wightman theory
USE **field theory (physics)**
quantum theory
relativistic theory

Wigner coefficient
GS coefficients

. **Wigner coefficient**
RT angular momentum
∞ mechanics (physics)

wilderness
RT deserts
forests
land management
plains
remote regions
rural areas

wildlife
GS animals
. **wildlife**
RT birds
endangered species
environment effects
fishes
habitats
wetlands

wildlife radiolocation
GS tracking (position)
. radio tracking
. . **wildlife radiolocation**
RT animals
bioinstrumentation
biotelemetry
radio transmitters
remote sensors
satellite instruments
satellite observation
triangulation

Williston Basin (North America)
GS landforms
. structural basins
. . **Williston Basin (North America)**
RT Canada
Montana
North America
North Dakota

winches
RT cranes
elevators (lifts)
∞ lifts
pulleys

wind (meteorology)
DEF A natural motion of the air, especially a noticeable current of air moving in the atmosphere parallel to the Earth's surface.
GS **wind (meteorology)**
. circumpolar westerlies
. ground wind
. gusts
. monsoons
. sea breeze
. squalls
. winds aloft
. . geostrophic wind
. . jet streams (meteorology)
RT aeolian tones
aerology
air currents
air pollution
Alpine meteorology
anemometers
atmospheric circulation
barotropic flow
∞ barriers
blowing
climatology
cyclones
gravity waves
hot-film anemometers
jimsphere balloons
marine meteorology
meridional flow
mesoscale phenomena
meteorology
mixing height
pressure ice
ripples
storm damage
storms
storms (meteorology)
thunderstorms
tidal waves
tornadoes
upwelling water
vertical air currents
weather
weather forecasting
windmills (windpowered machines)
windpower utilization
windpowered generators
zonal flow (meteorology)

wind circulation
USE **atmospheric circulation**

wind direction
DEF The direction from which the wind is blowing, measured in points of the compass or in azimuth degree.
RT atmospheric circulation
ground wind
meridional flow
meteorological parameters
sea breeze
smoke trails
upstream
upwelling water
windmills (windpowered machines)
windpowered generators
zonal flow (meteorology)

wind effects
RT atmospheric effects
dunes
dust storms
∞ effects
erosion
ground wind
pressure effects
sea breeze
sea roughness
sea states
soil erosion
turbulence
water circulation

wind energy
USE **windpower utilization**

wind erosion
GS erosion
. **wind erosion**
RT atmospheric effects
ground wind
sea breeze
water erosion

wind measurement
GS mechanical measurement
. **wind measurement**
. . wind velocity measurement
RT aerodynamics
anemometers
hot-film anemometers
∞ measurement
meteorological parameters
meteorology
rawinsondes
sea breeze
smoke trails

wind pressure
GS pressure
. **wind pressure**
RT dynamic loads
ground wind
gust loads
loads (forces)
windpower utilization
windpowered generators

wind profiles
RT atmospheric circulation
ground wind
∞ profiles
radial distribution
smoke trails
vertical distribution
zonal flow (meteorology)

Wind River Range (WY)
GS landforms
. mountains
. . **Wind River Range (WY)**
RT Wyoming

wind shear
DEF A sharp change in wind speed and direction over a short distance
UF *Dungeys wind shear mechanism*
RT aviation meteorology
barotropic flow
clear air turbulence
downbursts
geostrophic wind
ground wind
microbursts (meteorology)

wind tunnel apparatus
UF *wind tunnel balances*
GS **wind tunnel apparatus**
. wind tunnel drives
. wind tunnel nozzles
RT ∞ equipment
supersonic test apparatus

wind tunnel balances
USE **weight indicators**
wind tunnel apparatus

wind tunnel calibration
GS calibrating
. **wind tunnel calibration**
RT measuring instruments
pressure measurement
scaling laws
temperature measurement

wind tunnel drives
GS wind tunnel apparatus
. **wind tunnel drives**
RT ∞ drives
∞ fans
mechanical drives
plasma generators
pressure chambers
vacuum chambers

wind tunnel models
GS models
. **wind tunnel models**
. . powered models
RT aerodynamic configurations
aircraft models
dynamic models

flow visualization
∞ missile simulators
pylon mounting
scale models
semispan models
shadowgraph photography
∞ test equipment

wind tunnel nozzles
GS wind tunnel apparatus
. **wind tunnel nozzles**
RT conical nozzles
convergent–divergent nozzles
divergent nozzles
hypersonic nozzles
∞ nozzles
supersonic nozzles
transonic nozzles

wind tunnel stability tests
GS stability tests
. **wind tunnel stability tests**
RT aerodynamic stability
aircraft stability
missile tests
spacecraft stability
∞ tests

wind tunnel tests
RT aerodynamic characteristics
air data systems
density measurement
flow distribution
pressure measurement
∞ tests
trisonic wind tunnels
water tunnel tests

wind tunnel walls
GS walls
. **wind tunnel walls**
RT pressure vessels
reinforced shells

wind tunnels
DEF Tubelike structures or passages, sometimes continuous, together with their adjuncts, in which high speed movements of air or other gases are produced, as by fans, and within which objects such as engines or aircraft, airfoils, rockets (or models of these objects), are placed to investigate the airflow about them and the aerodynamic forces acting upon them.
GS test facilities
. **wind tunnels**
. . blowdown wind tunnels
. . combustion wind tunnels
. . cryogenic wind tunnels
. . hypersonic wind tunnels
. . . cascade wind tunnels
. . . hotshot wind tunnels
. . . plasma jet wind tunnels
. . . shock tunnels
. . hypervelocity wind tunnels
. . . cascade wind tunnels
. . . hotshot wind tunnels
. . . plasma jet wind tunnels
. . . shock tunnels
. . low density wind tunnels
. . low speed wind tunnels
. . . subsonic wind tunnels
. . rectangular wind tunnels
. . slotted wind tunnels
. . supersonic wind tunnels
. . transonic wind tunnels
. . trisonic wind tunnels
RT aerodynamics
exhaust flow simulation
flight simulators
gas guns
gas streams
hypersonic flow
spikes (aerodynamic configurations)
supersonic flow
test chambers
∞ test equipment
transonic flow
∞ tunnels

wind turbines
DEF Machines which convert wind energy into electricity.
GS turbomachinery
. turbines
. . **wind turbines**
. . . tip vanes
RT turbogenerators
wind velocity
windmills (windpowered machines)
windpower utilization
windpowered generators

wind vanes
GS display devices
. flow direction indicators
. . **wind vanes**
measuring instruments
. indicating instruments
. . flow direction indicators
. . . **wind vanes**
. meteorological instruments
. . **wind vanes**
vanes
. **wind vanes**
RT anemometers
hot–film anemometers

wind variations
GS variations
. **wind variations**
RT annual variations
atmospheric turbulence
diurnal variations
seasons

wind velocity
GS rates (per time)
. **wind velocity**
. . solar wind velocity
velocity
. **wind velocity**
. . solar wind velocity
RT airspeed
anemometers
flow measurement
Fujita method
ground wind
hot–film anemometers
meteorological parameters
sea roughness
wind turbines
windmills (windpowered machines)
windpower utilization
windpowered generators

wind velocity measurement
GS mechanical measurement
. velocity measurement
. . **wind velocity measurement**
. wind measurement
. . **wind velocity measurement**
RT anemometers
hot–film anemometers

winding
GS **winding**
. filament winding
. helical windings
. wire winding
RT cold working
leveling
metal working
spindles
spiral wrapping
stretching
twisting

windmilling
USE **autorotation**

windmills (windpowered machines)
RT electric generators
gears
ground wind
∞ machinery
mechanical drives
∞ power transmission
∞ pumping
wind (meteorology)
wind direction
wind turbines
wind velocity
windpower utilization
windpowered generators
windpowered pumps

window atmosphere sounding projectile
USE **WASP sounding rocket**

∞ **windows**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT TYPE TERMS LISTED BELOW)
RT infrared windows
ports (openings)
waveguide windows
windows (apertures)
windows (intervals)

windows (apertures)
SN (EXCLUDES INTERVALS IN TIME, FREQUENCY, ENERGY AND SO ON)
RT apertures
∞ barriers
curtains
doors
ducts
openings
optical materials
ports (openings)
separators
shielding
vents
∞ windows
windshields

windows (computer programs)
(added July 1993)
GS interfaces
. graphical user interface
. . **windows (computer programs)**
RT computer graphics
operating systems (computers)
real time operation

windows (intervals)
SN (EXCLUDES INTERVALS IN SPACE CONTINUUM)
GS **windows (intervals)**
. laser windows
. launch windows
RT bandwidth
burning time
countdown
energy bands
flight time

testing time
time measurement
∞ windows

windpower utilization
UF *wind energy*
GS utilization
. **windpower utilization**
RT air currents
air masses
atmospheric circulation
clean energy
Earth resources
ground wind
sea breeze
vanes
wind (meteorology)
wind pressure
wind turbines
wind velocity
windmills (windpowered machines)
windpowered generators
windpowered pumps

windpowered generators
RT electric generators
∞ generators
ground wind
vanes
wind (meteorology)
wind direction
wind pressure
wind turbines
wind velocity
windmills (windpowered machines)
windpower utilization

windpowered pumps
GS pumps
. **windpowered pumps**
RT ponds
∞ pumping
reservoirs
vanes
water
water resources
windmills (windpowered machines)
windpower utilization

winds aloft
GS wind (meteorology)
. **winds aloft**
. . geostrophic wind
. . jet streams (meteorology)
RT circumpolar westerlies
sea breeze
vertical air currents

windscreens
USE **windshields**

windshields
UF *windscreens*
RT aircraft compartments
canopies
cockpits
environmental control
locomotives
shielding
windows (apertures)

wines
GS liquids
. potable liquids
. . beverages
. . . **wines**
RT vineyards

wing camber
GS camber
. **wing camber**
RT cambered wings
conical camber
mission adaptive wings

wing flaps
UF *jet augmented wing flaps*
GS airfoils
. flaps (control surfaces)
. . **wing flaps**
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
brakes (for arresting motion)
. aerodynamic brakes
. . **wing flaps**
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
. aircraft brakes
. . **wing flaps**
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
control surfaces
. flaps (control surfaces)
. . **wing flaps**
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
drag devices
. aerodynamic brakes
. . **wing flaps**
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
RT externally blown flaps
jet flaps
split flaps

wing flow method tests
RT flight tests
fluid flow
ground tests
∞ methodology
∞ tests
transonic wind tunnels

wing icing
USE . **aircraft icing**

wing loading
GS aerodynamic forces
. **wing loading**
loads (forces)
. dynamic loads
. . **wing loading**
RT aerodynamic loads
aeroelasticity
edge loading
force distribution
gust loads
leading edge thrust
static loads
sweep effect
vortex flaps

wing nacelle configurations
DEF Aerodynamic configurations involving various arrangements of **wings** and nacelles (over-the-wing, etc.).
GS aerodynamic configurations
. **wing nacelle configurations**
RT ∞ aircraft
airframes
externally blown flaps

wing oscillations
GS oscillations
. airfoil oscillations
. . **wing oscillations**
. . . wing rock
RT aerodynamic stability
aeroelastic research wings
flapping
flutter
stable oscillations
undamped oscillations
unsteady aerodynamics
vibration

wing panels
GS panels
. **wing panels**
structural members
. **wing panels**
RT curved panels
rectangular panels
wings

wing planforms
GS planforms
. **wing planforms**
. . channel wings
. . infinite span wings
. . swept forward wings
. . . trapezoidal wings
. . sweptback wings
. . . arrow wings
. . . delta wings
. . . trapezoidal wings
. . variable sweep wings
RT HP-115 aircraft
low aspect ratio wings
monoplanes
oblique wings
rectangular planforms
slender wings
swept wings
swing wings
thrust distribution
unswept wings

wing profiles
GS airfoil profiles
. **wing profiles**
. . wing span
RT aerodynamic interference
GAW-1 airfoil
GAW-2 airfoil
mission adaptive wings
monoplanes
supercritical wings
swing wings
wings

wing rock
(added October 1997)
DEF A high angle-of-attack, nonlinear, dynamic phenomenon of limited cycle motion predominantly in roll.
GS oscillations
. airfoil oscillations
. . wing oscillations

. . . **wing rock**
RT aerodynamic stability
aircraft stability
angle of attack
delta wings
lateral oscillation
leading edges
roll
slender wings

wing roots
RT aerodynamic configurations
aircraft configurations
drooped airfoils
fairings
∞ roots

wing slats
USE **leading edge slats**

wing slots
GS slots
. **wing slots**
RT boundary layer control
leading edge slats
tangential blowing
vortex generators

wing span
GS airfoil profiles
. wing profiles
. . **wing span**
RT ∞ span
spanwise blowing
wings

wing tanks
GS tanks (containers)
. fuel tanks
. . **wing tanks**
RT ∞ containers
external store separation
external stores
external tanks
jettison systems
wing–fuselage stores

wing tip vortices
GS vortices
. **wing tip vortices**
RT blade–vortex interaction
flow distortion
horseshoe vortices
rotating fluids

wing tips
GS tips
. **wing tips**
RT airfoil profiles
blade tips
joined wings
wings

wing–fuselage stores
RT external store separation
external stores
fuselages
nacelles
pods (external stores)
protuberances
∞ storage
storage tanks
tanks (containers)
weapons
wing tanks

∞ **winged vehicles**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT ∞ aircraft
B-1 aircraft
drone vehicles
Firebee 2 target drone aircraft
gliders
hang gliders
hypersonic vehicles
jet aircraft
launch vehicles
leading edge flaps
man powered aircraft
missiles
monoplanes
recoverable launch vehicles
recoverable spacecraft
reentry vehicles
research aircraft
rocket vehicles
short takeoff aircraft
supercritical wings
ultralight aircraft
∞ vehicles
vertical takeoff aircraft
wings

winglets
DEF In aerospace engineering, small nearly vertical, winglike surfaces mounted rearward above the wing tips to reduce drag coefficients at lifting conditions.
RT drag reduction
fins
protuberances
vortex alleviation
vortex avoidance
wings

wings
UF *cantilever wings*
GS airfoils
. **wings**
. . aeroelastic research wings
. . cambered wings
. . caret wings
. . channel wings
. . cruciform wings
. . fixed wings
. . flexible wings
. . . parawings
. . GAW-1 airfoil
. . GAW-2 airfoil
. . joined wings
. . low aspect ratio wings
. . . delta wings
. . . trapezoidal wings
. . mission adaptive wings
. . oblique wings
. . rigid wings
. . rotary wings
. . . circulation control rotors
. . . lifting rotors
. . . . bearingless rotors
. . . rigid rotors
. . . tilting rotors
. . . tip driven rotors
. . . x wing rotors
. . slender wings
. . . infinite span wings
. . supercritical wings
. . swept wings
. . . swept forward wings
. . . . trapezoidal wings
. . . sweptback wings
. . . . arrow wings
. . . . delta wings
. . . . trapezoidal wings
. . swing wings
. . thin wings
. . . infinite span wings
. . twisted wings
. . uncambered wings
. . . ring wings
. . unswept wings
. . . infinite span wings
. . . rectangular wings
. . . ring wings
. . variable sweep wings
RT aircraft construction materials
aircraft parts
aircraft structures
airfoil fences
airframes
aspect ratio
blunt trailing edges
body–wing and tail configurations
body–wing configurations
coatings
control surfaces
drooped airfoils
dual wing configurations
leading edge flaps
missile components
porous boundary layer control
rotors
spoilers
wing panels
wing profiles
wing span
wing tips
∞ winged vehicles
winglets

winter
GS seasons
. **winter**
RT autumn
cold weather
equinoxes
pressure ice
solstices
spring (season)
summer

wire
DEF A rod or filament of drawn or rolled metal whose length is great in comparison with the major axis of its cross section.
GS **wire**
. electric wire
. exploding wires
. guy wires
RT billets
cables (ropes)
∞ coils
cordage
fasteners
∞ filaments
flat conductors
jumpers
reinforcement (structures)
rods
wiring

wire bridge circuits
GS circuits
. electric bridges
. . **wire bridge circuits**
. . . Wheatstone bridges
RT electric wire
exploding wires

wire cloth
UF *wire mesh*
RT fabrics
reinforcement (structures)
∞ screens
sieves

wire grid lenses
GS lenses
. **wire grid lenses**
reticles
. **wire grid lenses**
RT ∞ grids
lens antennas
magnetic lenses
turnstile antennas

wire mesh
USE **wire cloth**

wire winding
GS winding
. **wire winding**
RT magnet coils
wiring

wireless communication
UF *carrier systems*
GS telecommunication
. **wireless communication**
RT aircraft communication
closed circuit television
communication satellites
data links
data transmission
digital spacecraft television
facsimile communication
optical communication
radio telemetry
signal transmission
space communication
spacecraft communication
telemetry
voice communication

wiring
SN (PROCESS—AS DISTINGUISHED FROM MATERIAL)
UF ***electric wiring***
wiring systems
RT bundles
circuits
electrical insulation
flat conductors
splicing
transmission lines
wire
wire winding

wiring systems
USE **wiring**

Wisconsin
GS nations
. United States
. . **Wisconsin**

Wiswesser notations
GS classifications
. indexes (documentation)
. . **Wiswesser notations**
coding
. **Wiswesser notations**
RT ∞ chemical compounds
∞ chemistry
identifying
molecular structure
∞ reference systems

WKB approximation
USE **Wentzel–Kramer–Brillouin method**

Wolf–Rayet stars
DEF Very luminous, very hot (as high as 50,000K) stars whose spectra have broad emission lines (mainly He I and He II, which are presumed to originate from material ejected from the stars at very high velocities. Some W–R spectra show emission lines due to carbon CWC stars; others show emission lines due to nitrogen (WN stars). Used for W stars and W–R stars.
UF *W stars*
W–R stars
GS celestial bodies
. stars
. . early stars
. . . hot stars
. . . . **Wolf–Rayet stars**
RT A stars
astrophysics
B stars
carbon stars
celestial mechanics
ejecta
helium
nitrogen
O stars
stellar envelopes
stellar luminosity
stellar mass ejection
white dwarf stars

wolfram
USE **tungsten**

wolves
GS animals
. vertebrates
. . mammals
. . . **wolves**

women
USE **females**

wood
GS **wood**
. cork (materials)
. plywood
RT balsa
cellulose
Masonite (trademark)
organic materials
paper (material)
plants (botany)
slivers
trees (plants)
wooden structures

wooden structures
RT plywood
∞ structures
wood

wool
SN (LIMITED TO ANIMAL FIBERS)
GS fabrics
. **wool**
fibers
. **wool**
RT felts
hair
keratins
organic materials
sheep
yarns

word processing
DEF The use of a computer, often with a CRT under full-screen control, to facilitate the recording, storage, editing, updating, and organization of information in the form of words, especially sentential information.
RT computer techniques
data processing
office automation
words (language)

words (language)
RT abbreviations
consonants (speech)
conversation
English language
grammars
languages
messages
orthography
phonemes
phonemics
phonetics
semantics
sentences
speech
terminology
terms
thesauri
verbal communication
voice communication
vowels
word processing

work
GS **work**
. physical work
RT ∞ energy
heat
horsepower
kinetic energy
occupation
physical factors

work capacity
RT hyperkinesia
orbital workers
physical fitness
physical work
workloads (psychophysiology)

work functions
UF *Schottky effect*
RT electron emission
∞ functions
ionization potentials
perveance
photoelectric emission
Schottky diodes
thermionic emission

work hardening
GS hardening (materials)
. **work hardening**
. . strain hardening
RT cold hardening
mechanical twinning
metal working
peening
shot peening
work softening

work softening
DEF The phenomena of a drop in the yield strength of a metal when it has been strained or cold worked at low temperature and subsequently

strained at an elevated temperature to cause the dislocations to become unstable
GS softening
. **work softening**
RT microstructure
plastic deformation
work hardening

work–rest cycle
GS cycles
. **work–rest cycle**
RT fatigue (biology)
relaxation (physiology)

Workhorse helicopter
USE **CH–21 helicopter**

working fluids
DEF Fluids (gas or liquid) used as the medium for the transfer of energy from one part of a system to another.
RT consumables (spacecraft)
ferrofluids
fluid power
fluid transmission lines
∞ fluids
high temperature fluids
hydraulic fluids
jet condensers
phase change materials
sulfur hexafluoride
transmission fluids

workloads (psychophysiology)
RT fatigue (biology)
human performance
mental performance
physical work
psychomotor performance
psychophysiology
stress (psychology)
work capacity

workstations
GS stations
. **workstations**
. . crew workstations
. . . crew experiment stations
. . . crew observation stations
RT human factors engineering
man machine systems
productivity
UNIX (operating system)

world
USE **Earth (planet)**

world data centers
RT ∞ centers
∞ data
data retrieval
data storage
International Geophysical Year
libraries
transoceanic systems

World Meteorological Organization
GS organizations
. **World Meteorological Organization**
RT international cooperation
meteorology
United Nations

World Weather Watch
USE **meteorological services**

World Wide Web
(added July 1995)
UF *WWW*
GS networks
. communication networks
. . internets
. . . **World Wide Web**
. computer networks
. . internets
. . . **World Wide Web**
RT computer conferencing
electronic bulletin boards
information transfer
protocol (computers)

worms
GS animals
. invertebrates
. . **worms**
. . . flatworms
RT infestation
larvae
Rotifera

wound healing
GS healing
. **wound healing**
RT injuries

woven composites
(added November 1992)
GS composite materials
. fiber composites
. . **woven composites**
RT braided composites
carbon fiber reinforced plastics
epoxy matrix composites
fabrics
glass fiber reinforced plastics
graphite–epoxy composites
reinforcing fibers
three dimensional composites
weaving

Wrangell Mountains (AK)
GS landforms
. mountains
. . **Wrangell Mountains (AK)**
RT Alaska

∞ **wrap**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT composite wrapping
packaging

wraparound contact solar cells
USE **solar cells**

wreckage
RT accident investigation
accidents
crashes
sabotage
spacecraft breakup

wrenches
GS tools
. **wrenches**

wrinkling
GS **wrinkling**
. flange wrinkling
RT buckling
deformation
distortion
∞ ridges

wrist
GS anatomy
. musculoskeletal system
. . joints (anatomy)
. . . **wrist**
RT arm (anatomy)
hand (anatomy)

wrought alloys
GS alloys
. **wrought alloys**
RT Rene 41
Rene 63
Rene 77
Waspaloy

WU–2 aircraft
USE **U–2 aircraft**

wurtzite
GS chalcogenides
. sulfides
. . inorganic sulfides
. . . zinc sulfides
. . . . **wurtzite**
minerals
. **wurtzite**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . zinc sulfides
. . . . **wurtzite**
zinc compounds
. zinc sulfides
. . **wurtzite**

WWW
USE **World Wide Web**

WWW (meteorology)
USE **meteorological services**

Wyoming
GS nations
. United States
. . **Wyoming**
RT Bighorn Mountains (MT–WY)
Black Hills (SD–WY)
Wind River Range (WY)
Yellowstone National Park (ID–MT–WY)

X

X band
USE **superhigh frequencies**

X mesons
GS particles
. elementary particles
. . bosons
. . . mesons
. . . . meson resonance
. . . . . **X mesons**
. . fermions
. . . meson resonance
. . . . **X mesons**
. . hadrons
. . . mesons
. . . . meson resonance
. . . . . **X mesons**
. nuclear particles
. . bosons
. . . mesons
. . . . meson resonance
. . . . . **X mesons**
resonance
. meson resonance
. . **X mesons**

x ray absorption
GS energy absorption
. radiation absorption
. . electromagnetic absorption
. . . **x ray absorption**
RT ∞ absorption
electron spectroscopy
x ray detectors

x ray analysis
SN (EXCLUDES X RAY STRESS ANALYSIS)
GS **x ray analysis**
. Laue method
. x ray spectroscopy
RT ∞ analyzing
chemical analysis
crystallography
defects
fluoroscopy
lattice parameters
∞ materials tests
microanalysis
microbeams
radiography
radiology
stereochemistry
tomography

x ray apparatus
GS medical equipment
. **x ray apparatus**
. . lixiscopes
. . x ray tubes
RT ∞ equipment
radiography
x ray detectors

x ray astronomy
GS astronomy
. **x ray astronomy**
RT cosmic x rays
Exosat **satellite**
gamma ray astronomy
gamma ray bursts
Ginga **satellite**
Granat **satellite**
grazing incidence telescopes
HEAO 4
lixiscopes
radiography
ROSAT mission
SAS–3
Tenma **satellite**
Uhuru **satellite**
ultraviolet telescopes
X Ray Astrophysics Facility
x ray binaries
x ray detectors
x ray sources
x ray stars

X Ray Astrophysics Facility
DEF Free-flng x ray observatory that is shuttle-launched, maintainable in orbit, and retrievable. Used for Advanced X Ray Astrophysics Facility and AXAF.
UF *Advanced X Ray Astrophysics Facility*
AXAF
GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . **X Ray Astrophysics Facility**
observatories
. astronomical observatories
. . astronomical satellites
. . . **X Ray Astrophysics Facility**
payloads
. Space Shuttle payloads
. . **X Ray Astrophysics Facility**
telescopes
. spaceborne telescopes
. . **X Ray Astrophysics Facility**
. x ray telescopes
. . **X Ray Astrophysics Facility**
RT astrophysics
∞ facilities
spaceborne astronomy
x ray astronomy

x ray binaries
DEF Bright galactic x ray sources consisting of a compact star (neutron star or black hole) accreting matter from a close companion star.
GS celestial bodies
. stars
. . double stars
binary stars
. . . . **x ray binaries**
. . x ray stars
. . . **x ray binaries**
x ray sources
. x ray stars
. . **x ray binaries**
RT accretion disks
astrophysics
black holes (astronomy)
companion stars
cosmic x rays
eclipsing binary stars
neutron stars
stellar mass accretion
x ray astronomy
x rays

x ray density measurement
GS density measurement
. **x ray density measurement**
RT flux density

x ray detectors
(added April 1992)
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . **x ray detectors**
RT bolometers
infrared detectors
multi-anode microchannel arrays
photodiodes
photometers
radiometers
ultraviolet detectors
x ray absorption
x ray apparatus
x ray astronomy
x ray spectroscopy
x ray telescopes
x rays

x ray diffraction
GS diffraction
. **x ray diffraction**
RT crystallography
electron diffraction
Laue method
metallography
radiography
x ray optics

x ray fluorescence
GS emission
. light emission
. . luminescence
. . . fluorescence
. . . . **x ray fluorescence**
. . . photoluminescence
. . . . **x ray fluorescence**
RT radiography

x ray imagery
DEF Reproduction of an object by means of focusing penetrating electromagnetic radiation (wavelengths ranging from 10–5 to 103 angstroms) coming from the object or reflected by the object. Analogous to infrared imagery, radar imagery and microwave imagery using the IR, radar and microwave frequencies.
GS imagery
. **x ray imagery**
RT imaging techniques
infrared imagery
lixiscopes
microwave imagery
radar imagery
radiography

x ray inspection
GS inspection
. **x ray inspection**
RT nondestructive tests
radiography
∞ tests

x ray irradiation
GS irradiation
. **x ray irradiation**

x ray lasers
GS stimulated emission devices
. lasers
. . **x ray lasers**
RT electron transitions
laser outputs

x ray optics
(added January 1994)
DEF The study and application of x ray properties and phenomena that are similar to the optical characteristics of visible light.
RT geometrical optics
grazing incidence
mirrors
∞ optics
x ray diffraction
x ray telescopes
x rays

x ray scattering
GS scattering
. wave scattering
. . electromagnetic scattering
. . . **x ray scattering**
RT form factors

x ray sources
GS **x ray sources**
. x ray stars
. . x ray binaries
RT cooling flows (astrophysics)
cosmic x rays
Exosat satellite
galactic bulge
gamma ray sources (astronomy)
∞ radiation
ROSAT mission
x ray astronomy
x rays

x ray spectra
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . **x ray spectra**
RT Ginga satellite
North Polar Spur (astronomy)
quasars
solar spectra
stellar spectra
Tenma satellite
x ray spectrometers

x ray spectrography
USE **x ray spectroscopy**

x ray spectrometers
(added October 1996)
GS measuring instruments
. spectrometers
. . **x ray spectrometers**
RT spectroscopy
x ray spectra
x ray telescopes

x ray spectrometry
USE **x ray spectroscopy**

X Ray Spectropolarimetry Payload
USE **EXPOS (Spacelab payload)**

x ray spectroscopy
UF *X ray spectrography*
X ray spectrometry
GS spectroscopy
. **x ray spectroscopy**
x ray analysis
. **x ray spectroscopy**
RT astronomical spectroscopy
∞ materials tests
molecular spectroscopy
radio spectroscopy
radiography
spectroscopic analysis
ultraviolet spectroscopy
vacuum spectroscopy
x ray detectors

x ray stars
DEF Stars with strong emission in the x ray portion of the electromagnetic spectrum. Used for extars.
UF *extars*
GS celestial bodies
. stars
. . **x ray stars**
. . . x ray binaries
x ray sources
. **x ray stars**
. . x ray binaries
RT emission spectra
Ginga satellite
neutron stars
radiation sources
stellar radiation
Tenma satellite
Uhuru satellite
x ray astronomy
x ray telescopes
x rays

x ray stress analysis
GS stress analysis
. **x ray stress analysis**
RT stresses
temperature inversions

x ray stress measurement
GS mechanical measurement
. stress measurement
. . **x ray stress measurement**

x ray telescopes
GS telescopes
. **x ray telescopes**
. X Ray Astrophysics Facility
RT grazing incidence telescopes
Kvant modules
radiography
ROSAT mission
x ray detectors
x ray optics
x ray spectrometers
x ray stars

X Ray Timing Explorer
DEF An Explorer satellite planned for late 1993 or 1994 to consist of three experiments: a large area proportional counter, an all sky monitor, and a high energy x ray timing experiment. The package is designed to measure the time variability of x ray sources and broad band spectra.
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **X Ray Timing Explorer**

x ray tubes
DEF Vacuum tubes designed to produce x rays by accelerating electrons to a high velocity by means of an electrostatic field, then suddenly stopping them by collision with a target.
GS medical equipment
. x ray apparatus
. . **x ray tubes**
RT electron tubes
radiography

x rays
DEF Nonnuclear electromagnetic radiation of very short wavelength, lying within the interval of 0.1 to 100 angstroms (between gamma rays, and ultraviolet radiation).
GS electromagnetic radiation
. **x rays**
. . cosmic x rays
. . solar x-rays
ionizing radiation
. **x rays**
. . cosmic x rays
. . solar x-rays
RT auroras
blackout (propagation)
bremsstrahlung
cosmic rays
emission spectra
extraterrestrial radiation
far ultraviolet radiation
gamma rays
monochromatic radiation
radiography
radiology
synchrotron radiation
system generated electromagnetic pulses
x ray binaries
x ray detectors
x ray optics
x ray sources
x ray stars

x wing rotors
DEF A new VTOL concept utilizing the stopped rotor X-wing aircraft.
GS airfoils
. wings
. . rotary wings
. . . **x wing rotors**
rotating bodies
. rotors
. . rotary wings
. . . **x wing rotors**
RT circulation control rotors
∞ rotor blades

X-1 aircraft
GS Bell aircraft
. **X-1 aircraft**
monoplanes
. **X-1 aircraft**
research vehicles
. research aircraft
. . **X-1 aircraft**
rocket vehicles
. rocket planes
. . **X-1 aircraft**
supersonic aircraft
. **X-1 aircraft**
RT ∞ aircraft

X-2 aircraft
GS Bell aircraft
. **X-2 aircraft**
monoplanes
. **X-2 aircraft**
research vehicles
. research aircraft
. . **X-2 aircraft**
rocket vehicles
. rocket planes
. . **X-2 aircraft**
supersonic aircraft
. **X-2 aircraft**
RT ∞ aircraft

X-3 aircraft
GS jet aircraft
. **X-3 aircraft**

McDonnell Douglas aircraft
. Douglas aircraft
. . **X-3 aircraft**
monoplanes
. **X-3 aircraft**
research vehicles
. research aircraft
. . **X-3 aircraft**
supersonic aircraft
. **X-3 aircraft**
RT ∞ aircraft

X-5 aircraft
GS Bell aircraft
. **X-5 aircraft**
jet aircraft
. **X-5 aircraft**
monoplanes
. **X-5 aircraft**
research vehicles
. research aircraft
. . **X-5 aircraft**
RT ∞ aircraft

X-13 aircraft
GS jet aircraft
. **X-13 aircraft**
monoplanes
. **X-13 aircraft**
research vehicles
. research aircraft
. . **X-13 aircraft**
Ryan aircraft
. **X-13 aircraft**
V/STOL aircraft
. vertical takeoff aircraft
. . **X-13 aircraft**
RT ∞ aircraft

X-14 aircraft
GS Bell aircraft
. **X-14 aircraft**
jet aircraft
. **X-14 aircraft**
monoplanes
. **X-14 aircraft**
research vehicles
. research aircraft
. . **X-14 aircraft**
V/STOL aircraft
. vertical takeoff aircraft
. . **X-14 aircraft**
RT ∞ aircraft

X-15 aircraft
GS North American aircraft
. **X-15 aircraft**
research vehicles
. research aircraft
. . **X-15 aircraft**
rocket vehicles
. rocket planes
. . **X-15 aircraft**
supersonic aircraft
. **X-15 aircraft**
RT ∞ aircraft
XLR-99 engine

X-17 reentry vehicle
GS reentry vehicles
. **X-17 reentry vehicle**
RT rocket vehicles
solid propellant rocket engines

X-19 aircraft
GS Curtiss-Wright aircraft
. **X-19 aircraft**
research vehicles
. research aircraft
. . **X-19 aircraft**
tandem wing aircraft
. **X-19 aircraft**
V/STOL aircraft
. vertical takeoff aircraft
. . **X-19 aircraft**
RT ∞ aircraft

X-20 aircraft
UF *Dyna-Soar space glider*
GS Boeing aircraft
. **X-20 aircraft**
gliders
. boostglide vehicles
. . **X-20 aircraft**
. hypersonic gliders
. . **X-20 aircraft**
hypersonic vehicles
. hypersonic aircraft
. . hypersonic gliders
. . . **X-20 aircraft**
lifting bodies
. lifting reentry vehicles
. . **X-20 aircraft**
maneuverable spacecraft
. **X-20 aircraft**
reentry vehicles
. boostglide vehicles
. . **X-20 aircraft**
. maneuverable reentry bodies
. . lifting reentry vehicles
. . . **X-20 aircraft**
research vehicles
. research aircraft
. . **X-20 aircraft**
RT aerospace planes
∞ aircraft
manned spacecraft
soft landing spacecraft

X-21 aircraft
GS jet aircraft
. **X-21 aircraft**
monoplanes
. **X-21 aircraft**
Northrop aircraft
. **X-21 aircraft**
research vehicles
. research aircraft
. . **X-21 aircraft**
RT ∞ aircraft
boundary layer control
laminar boundary layer

X-21A aircraft
GS jet aircraft
. **X-21A aircraft**
monoplanes
. **X-21A aircraft**
Northrop aircraft
. **X-21A aircraft**
research vehicles
. research aircraft
. . **X-21A aircraft**
RT ∞ aircraft
laminar flow

X-22 aircraft
GS Bell aircraft
. **X-22 aircraft**
research vehicles
. research aircraft
. . **X-22 aircraft**
V/STOL aircraft
. vertical takeoff aircraft
. . **X-22 aircraft**
RT ∞ aircraft
tandem wing aircraft
tilt wing aircraft

X-22A aircraft
GS research vehicles
. research aircraft
. . **X-22A aircraft**
tandem wing aircraft
. **X-22A aircraft**
V/STOL aircraft
. vertical takeoff aircraft
. . **X-22A aircraft**
RT ∞ aircraft

X-24 aircraft
GS lifting bodies
. lifting reentry vehicles
. . **X-24 aircraft**
reentry vehicles
. maneuverable reentry bodies
. . lifting reentry vehicles
. . . **X-24 aircraft**
research vehicles
. research aircraft
. . **X-24 aircraft**
RT ∞ aircraft

X-29 aircraft
RT ∞ aircraft
swept forward wings

X-30 vehicle
GS aerospace vehicles
. aerospace planes
. . **X-30 vehicle**
hypersonic vehicles
. **X-30 vehicle**
maneuverable spacecraft
. aerospace planes
. . **X-30 vehicle**
manned spacecraft
. aerospace planes
. . **X-30 vehicle**
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . aerospace planes
. . . . **X-30 vehicle**
research vehicles
. **X-30 vehicle**
soft landing spacecraft
. aerospace planes
. . **X-30 vehicle**
RT National Aerospace Plane Program
single stage to orbit vehicles
∞ spacecraft
transatmospheric vehicles

X-31 aircraft
(added June 1994)
DEF A research aircraft (single-engine, delta-wing/canard configuration) designed to demonstrate enhanced fighter maneuverability (EFM) and post-stall controllability through the use of thrust vector control at very high angle-of-attack.
GS jet aircraft
. **X-31 aircraft**
monoplanes
. **X-31 aircraft**
research vehicles
. research aircraft
. . **X-31 aircraft**
RT ∞ aircraft
aircraft maneuvers
canard configurations

fighter aircraft
thrust vector control

X-33 reusable launch vehicle
(added January 1996)
GS launch vehicles
. reusable launch vehicles
. . **X-33 reusable launch vehicle**
RT liquid propellant rocket engines
recoverable launch vehicles
reusable spacecraft

X-34 reusable launch vehicle
(added January 1996)
GS launch vehicles
. reusable launch vehicles
. . **X-34 reusable launch vehicle**
RT air launching
Boeing 747 aircraft
liquid propellant rocket engines
recoverable launch vehicles
reusable spacecraft

X-36 aircraft
(added March 1996)
GS McDonnell Douglas aircraft
. **X-36 aircraft**
research vehicles
. research aircraft
. . **X-36 aircraft**
tailless aircraft
. **X-36 aircraft**
RT ∞ aircraft
B-2 aircraft
flight test vehicles

X-38 crew return vehicle
(added December 1996)
GS recovery vehicles
. **X-38 crew return vehicle**
RT Assured Crew Return Vehicle
escape capsules
lifeboats
rescue operations
return to Earth space flight
space stations

X-248 engine
UF *Altair engine*
GS engines
. rocket engines
. . solid propellant rocket engines
. . . **X-248 engine**
RT Blue Scout rocket vehicle
Scout launch vehicle
vanguard 2 launch vehicle

X-254 engine
GS engines
. rocket engines
. . solid propellant rocket engines
. . . **X-254 engine**
RT Antares rocket vehicle
Blue Scout rocket vehicle
Scout launch vehicle

X-258 engines
GS engines
. rocket engines
. . solid propellant rocket engines
. . . **X-258 engines**
. . . . X-258-B1 engine
RT Scout launch vehicle

X-258-B1 engine
GS engines
. rocket engines
. . solid propellant rocket engines
. . . X-258 engines
. . . . **X-258-B1 engine**

X-259 engine
GS engines
. rocket engines
. . solid propellant rocket engines
. . . **X-259 engine**
RT Scout launch vehicle

X-405 engine
GS engines
. rocket engines
. . booster rocket engines
. . . **X-405 engine**
. . liquid propellant rocket engines
. . . **X-405 engine**
RT Vanguard project

x-y plotters
GS recording instruments
. plotters
. . **x-y plotters**
RT digital to analog converters

xanthic acids
GS acids
. **xanthic acids**
RT organic liquids

xanthines
GS fungicides
. **xanthines**
. . caffeine
. . guanines
. . uric acid
nitrogen compounds
. **xanthines**
. . caffeine
. . guanines
. . uric acid
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . purines
. . . . **xanthines**
. . . . . caffeine
. . . . . guanines
. . . . . uric acid

XB-47 aircraft
USE **B-47 aircraft**

XB-70 aircraft
USE **B-70 aircraft**

XBQM-180A aircraft
USE **VATOL aircraft**

XC-142 aircraft
UF *C-142 aircraft*
GS Fairchild-Hiller aircraft
. **XC-142 aircraft**
jet aircraft
. **XC-142 aircraft**
Ling-Temco-Vought aircraft
. **XC-142 aircraft**
monoplanes
. **XC-142 aircraft**
Ryan aircraft
. **XC-142 aircraft**
tilt wing aircraft
. **XC-142 aircraft**
transport aircraft
. **XC-142 aircraft**
V/STOL aircraft
. vertical takeoff aircraft
. . **XC-142 aircraft**
RT ∞ aircraft
turboprop engines

xenon
GS chemical elements
. rare gases
. . **xenon**
. . . xenon isotopes
. . . . xenon 129
. . . . xenon 133
. . . . xenon 135
gases
. rare gases
. . **xenon**
. . . xenon isotopes
. . . . xenon 129
. . . . xenon 133
. . . . xenon 135

xenon 129
GS chemical elements
. nuclides
. . isotopes
. . . xenon isotopes
. . . . **xenon 129**
. rare gases
. . xenon
. . . xenon isotopes
. . . . **xenon 129**
gases
. rare gases
. . xenon
. . . xenon isotopes
. . . . **xenon 129**

xenon 133
GS chemical elements
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . **xenon 133**
. . . xenon isotopes
. . . . **xenon 133**
. rare gases
. . xenon
. . . xenon isotopes
. . . . **xenon 133**
gases
. rare gases
. . xenon
. . . xenon isotopes
. . . . **xenon 133**

xenon 135
GS chemical elements
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . **xenon 135**
. . . xenon isotopes
. . . . **xenon 135**
. rare gases
. . xenon
. . . xenon isotopes
. . . . **xenon 135**
gases
. rare gases
. . xenon
. . . xenon isotopes
. . . . **xenon 135**

xenon chloride lasers
DEF Rare gas-halide lasers using XeCl as the active material.
GS stimulated emission devices
. lasers
. . gas lasers
. . . rare gas-halide lasers
. . . . **xenon chloride lasers**
RT electron transitions

excimer lasers
laser materials
laser outputs
ultraviolet lasers

xenon compounds
RT ∞ chemical compounds
∞ rare gas compounds

xenon fluoride lasers
DEF Lasers using XeF as the active material.
GS stimulated emission devices
. **lasers**
. . gas lasers
. . . rare gas–halide lasers
. . . . **xenon fluoride lasers**
RT electron transitions
excimer lasers
laser materials
laser outputs

xenon isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **xenon isotopes**
. . . . xenon 129
. . . . xenon 133
. . . . xenon 135
. rare gases
. . xenon
. . . **xenon isotopes**
. . . . xenon 129
. . . . xenon 133
. . . . xenon 135
gases
. rare gases
. . xenon
. . . **xenon isotopes**
. . . . xenon 129
. . . . xenon 133
. . . . xenon 135

xenon lamps
GS lighting equipment
. luminaires
. . **xenon lamps**
RT arc lamps
flash lamps
infrared radiation
mercury lamps

xerogels
(added July 1997)
GS **gels**
. **xerogels**
RT aerogels
porous materials
silica gel
silicon dioxide
sol–gel processes

xerography
GS **imagery**
. reproduction (copying)
. . **xerography**
RT electrostatic charge
photographs
photography

XH–51 helicopter
UF *aerogyro helicopters*
CL–595 helicopter
H–51 helicopter
Lockheed 186 helicopter
Lockheed CL–595 helicopter
GS Lockheed aircraft
. **XH–51 helicopter**
research vehicles
. research aircraft
. . **XH–51 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . rigid rotor helicopters
. . . . **XH–51 helicopter**

xi hyperons
GS particles
. elementary particles
. . bosons
. . . mesons
. . . . hyperons
. . . . . **xi hyperons**
. . . **xi hyperons**
. . fermions
. . . baryons
. . . . hyperons
. . . . . **xi hyperons**
. . hadrons
. . . baryons
. . . . hyperons
. . . . . **xi hyperons**
. . . mesons
. . . . hyperons
. . . . . **xi hyperons**
. nuclear particles
. . bosons
. . . mesons
. . . . hyperons
. . . . . **xi hyperons**
. . . **xi hyperons**

XJ–34–WE–32 engine
USE **J–34 engine**

XJ–79–GE–1 engine
USE **J–79 engine**

XLR–99 engine
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **XLR–99 engine**
RT X–15 aircraft

XM–6 squib
USE **squibs**

XM–8 squib
USE **squibs**

XM–33 engine
UF *TX–33–39 engine*
GS engines
. rocket engines
. . solid propellant rocket engines
. . . **XM–33 engine**
RT Blue Scout rocket vehicle
EXOS sounding rocket
Little Joe 2 launch vehicle
polaris missiles
Scout launch vehicle
TX–354 engine

XV–3 aircraft
UF *V–3 aircraft*
GS Bell aircraft
. **XV–3 aircraft**
V/STOL aircraft
. **XV–3 aircraft**
RT ∞ aircraft
tilting rotors

XV–4 aircraft
UF *Hummingbird aircraft*
Lockheed XV–4A aircraft
V–4 aircraft
VZ–10 aircraft
GS jet aircraft
. **XV–4 aircraft**
Lockheed aircraft
. **XV–4 aircraft**
monoplanes
. **XV–4 aircraft**
research vehicles
. research aircraft
. . **XV–4 aircraft**
V/STOL aircraft
. vertical takeoff aircraft
. . **XV–4 aircraft**
RT ∞ aircraft

XV–5 aircraft
UF *V–5 aircraft*
VZ–11 aircraft
XV–5A aircraft
GS fan in wing aircraft
. **XV–5 aircraft**
jet aircraft
. **XV–5 aircraft**
monoplanes
. **XV–5 aircraft**
research vehicles
. research aircraft
. . **XV–5 aircraft**
Ryan aircraft
. **XV–5 aircraft**
V/STOL aircraft
. **XV–5 aircraft**
RT ∞ aircraft

XV–5A aircraft
USE **XV–5 aircraft**

XV–6A aircraft
USE **P–1127 aircraft**

XV–8A aircraft
GS research vehicles
. research aircraft
. . **XV–8A aircraft**
Ryan aircraft
. **XV–8A aircraft**
utility aircraft
. **XV–8A aircraft**
V/STOL aircraft
. **XV–8A aircraft**
RT ∞ aircraft
flexible wings

XV–9A aircraft
UF *V–9 aircraft*
GS Hughes aircraft
. **XV–9A aircraft**
jet aircraft
. **XV–9A aircraft**
research vehicles
. research aircraft
. . **XV–9A aircraft**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **XV–9A aircraft**
RT ∞ aircraft
tip driven rotors

XV–11A aircraft
GS research vehicles
. research aircraft
. . **XV–11A aircraft**
V/STOL aircraft
. vertical takeoff aircraft

. . **XV-11A aircraft**
RT∞ aircraft
lift fans
shrouded propellers

XV-15 aircraft
DEF Experimental model of a tilt-rotor aircraft built by Bell Aircraft Company.
GS Bell aircraft
. **XV-15 aircraft**
V/STOL aircraft
. rotary wing aircraft
. . tilt rotor aircraft
. . . **XV-15 aircraft**
RT∞ aircraft
helicopters
Tilt Rotor Research Aircraft Program

xylene
DEF A mixture of Carbon 8 aromatic hydrocarbons.
GS organic compounds
. hydrocarbons
. . **xylene**
RT toluene

xylose
GS organic compounds
. carbohydrates
. . sugars
. . . monosaccharides
. . . . pentose
. . . . . **xylose**

Y

Y–Ba–Cu–O superconductors
USE **YBCO superconductors**

YAG (garnet)
USE **yttrium–aluminum garnet**

YAG lasers
GS electronic equipment
. solid state devices
. . solid state lasers
. . . **YAG lasers**
stimulated emission devices
. lasers
. . solid state lasers
. . . **YAG lasers**
RT laser heating
laser materials
laser outputs

Yagi antennas
DEF Directional antennas used on some types of radar and radio equipment consisting of an array of elemental, single wire dipole antennas and reflectors.
GS antennas
. directional antennas
. . **Yagi antennas**
arrays
. antenna arrays
. . linear arrays
. . . endfire arrays
. . . . **Yagi antennas**
RT antenna design
dipole antennas
directors (antenna elements)
parasitic elements (antennas)
waveguide antennas

Yak 40 aircraft
GS general aviation aircraft
. **Yak 40 aircraft**
jet aircraft
. **Yak 40 aircraft**
passenger aircraft
. **Yak 40 aircraft**
Yakovlev aircraft
. **Yak 40 aircraft**
RT ∞ aircraft

YAK aircraft
USE **Yakovlev aircraft**

Yakovlev aircraft
(added September 1995)
UF *YAK aircraft*
GS **Yakovlev aircraft**
. Yak 40 aircraft
RT ∞ aircraft

Yang–Mills fields
DEF Types of fields based upon Yang–Mills theory.
RT electromagnetic fields
field theory (physics)
gauge theory
gravitational fields
perturbation theory
Yang–Mills theory

Yang–Mills theory
DEF Mathematical idea for describing interactions among elementary particles which is based on the idea of gauge invariance under a non Abelian group. Used for Casimir energy.
RT field theory (physics)
gauge theory
perturbation theory
space–time functions
statistical analysis
supergravity
theoretical physics
∞ theories
Yang–Mills fields

yarns
RT cordage
cotton
fibers
∞ rovings
strands
wool

YAV–8B aircraft
USE **Harrier aircraft**

yaw
UF *damping in yaw*
fishtailing
yawmeters
GS attitude (inclination)
. **yaw**
RT aerodynamic stability
coning motion
directional control
directional stability
lateral oscillation
∞ motion
pitch (inclination)
roll
rotation
sideslip
skidding
turning flight
yawing moments

yawing moments
DEF Moments that tend to rotate aircraft, airfoils, rockets, or spacecraft about a vertical axis.
GS moments
. stability derivatives
. . **yawing moments**
RT aerodynamic coefficients
lateral oscillation
moments of inertia
pitching moments
rolling moments
torque
yaw

yawmeters
USE **attitude indicators**
yaw

YBCO superconductors
(added September 1992)
UF *Y–Ba–Cu–O superconductors*
GS chalcogenides
. oxides
. . metal oxides
. . . mixed oxides
. . . . **YBCO superconductors**
conductors
. superconductors (materials)
. . high temperature superconductors
. . . **YBCO superconductors**
RT barium oxides
ceramics
cermets
copper oxides
low temperature physics
superconducting films
superconductivity
thin films
yttrium oxides

YC–14 aircraft
GS transport aircraft
. cargo aircraft
. . **YC–14 aircraft**
RT ∞ aircraft
Boeing aircraft
∞ military aircraft

YC–15 aircraft
USE **C–15 aircraft**

YC–123 aircraft
USE **C–123 aircraft**

yeast
GS plants (botany)
. fungi
. . **yeast**
RT ∞ food

Yellowstone National Park (ID–MT–WY)
GS land
. parks
. . national parks
. . . **Yellowstone National Park (ID–MT–WY)**
RT Idaho
Montana
Wyoming

Yemen
GS nations
. **Yemen**
RT Asia

YF–12 aircraft
GS attack aircraft
. fighter aircraft
. . **YF–12 aircraft**
RT ∞ aircraft
aircraft design
∞ interceptors
jet aircraft
∞ military aircraft
reconnaissance aircraft
research aircraft

YF–16 aircraft
USE **F–16 aircraft**

YF–17 aircraft
USE **F–17 aircraft**

YF–22 aircraft
USE **F–22 aircraft**

YF–102 aircraft
USE **F–102 aircraft**

YHU–1 helicopter
USE **UH–1 helicopter**

yield
RT losses
output

yield point
UF *damage threshold*
Luder bands
GS mechanical properties
. plastic properties

. . **yield point**
RT microyield strength
Tresca flow

yield strength
DEF The stress at which a material exhibits a specific limiting deviation from the proportionality of stress to strain. This deviation is expressed in terms of strain.
GS mechanical properties
. **yield strength**
. . load carrying capacity
. . microyield strength
RT ductile–brittle transition
elastic properties
fracture strength
high strength
J integral
plastic deformation
∞ strength
stresses
stress–strain diagrams
stress–strain relationships
temperature inversions

YIG (garnet)
USE **yttrium–iron garnet**

YJ–73–GE–3 engine
USE **J–73 engine**

YJ–79 engine
USE **J–79 engine**

YJ–85 engine
USE **J–85 engine**

YJ–93 engine
USE **J–93 engine**

YJ–93–GE–3 engine
USE **J–93 engine**

YJ73 turbojet engine
USE **J–73 engine**

YLF lasers
(added August 1990)
UF *yttrium lithium fluoride lasers*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . semiconductor lasers
. . . . **YLF lasers**
. . solid state lasers
. . . **YLF lasers**
stimulated emission devices
. lasers
. . semiconductor lasers
. . . **YLF lasers**
. . solid state lasers
. . . **YLF lasers**
RT infrared lasers

YLR–91–AJ–1 engine
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **YLR–91–AJ–1 engine**
RT Titan ICBM

yo–yo devices
RT angular acceleration
gyroscopic stability
satellite rotation
spin
spin reduction

yokes
RT beam waveguides
connectors
couplers
couples
deflection
directional couplers
ferromagnetic materials
∞ joining
linkages
magnet coils

Young modulus
USE **modulus of elasticity**

Young–Helmholtz theory
RT color vision
photoreceptors
∞ theories

youth
RT growth
human beings

YS–11 aircraft
UF *Nihon YS–11 aircraft*
GS jet aircraft
. turboprop aircraft
. . **YS–11 aircraft**
monoplanes
. **YS–11 aircraft**
Nihon aircraft
. **YS–11 aircraft**
passenger aircraft
. **YS–11 aircraft**
transport aircraft
. **YS–11 aircraft**

YSZ
USE **yttria–stabilized zirconia**

YT–2 aircraft
USE **T–2 aircraft**

ytterbium
GS chemical elements
. rare earth elements
. . **ytterbium**
. . . ytterbium isotopes
metals
. rare earth elements
. . **ytterbium**
. . . ytterbium isotopes

ytterbium compounds
GS rare earth compounds
. **ytterbium compounds**
RT ∞ chemical compounds
∞ metal compounds

ytterbium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **ytterbium isotopes**
. rare earth elements
. . ytterbium
. . . **ytterbium isotopes**
metals
. rare earth elements
. . ytterbium
. . . **ytterbium isotopes**

yttria–stabilized zirconia
(added February 1994)
UF *YSZ*
GS chalcogenides
. oxides
. . metal oxides
. . . zirconium oxides
. . . . **yttria–stabilized zirconia**
zirconium compounds
. zirconium oxides
. . **yttria–stabilized zirconia**
RT ceramics
thin films
yttrium oxides

yttrium
GS chemical elements
. rare earth elements
. . **yttrium**
. . . yttrium isotopes
metals
. rare earth elements
. . **yttrium**
. . . yttrium isotopes
. transition metals
. . **yttrium**
. . . yttrium isotopes

yttrium alloys
GS alloys
. **yttrium alloys**
RT rare earth alloys

yttrium compounds
GS **yttrium compounds**
. yttrium oxides
. yttrium–aluminum garnet
. yttrium–iron garnet
RT ∞ chemical compounds
Group 3B compounds
∞ metal compounds

yttrium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **yttrium isotopes**
. rare earth elements
. . yttrium
. . . **yttrium isotopes**
metals
. rare earth elements
. . yttrium
. . . **yttrium isotopes**
. transition metals
. . yttrium
. . . **yttrium isotopes**

yttrium lithium fluoride lasers
USE **YLF lasers**

yttrium oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **yttrium oxides**
yttrium compounds
. **yttrium oxides**
RT high temperature superconductors
YBCO superconductors
yttria–stabilized zirconia

yttrium–aluminum garnet
UF *YAG (garnet)*
GS minerals
. garnets
. . **yttrium–aluminum garnet**
silicon compounds
. silicates
. . garnets
. . . **yttrium–aluminum garnet**
yttrium compounds
. **yttrium–aluminum garnet**
RT ferrites
magnetostatic amplifiers

yttrium–iron garnet
UF *YIG (garnet)*
GS minerals
. garnets
. . **yttrium–iron garnet**
silicon compounds
. silicates
. . garnets
. . . **yttrium–iron garnet**
yttrium compounds
. **yttrium–iron garnet**
RT ferrites
magnetostatic amplifiers
waveguide tuners

Yugoslavia
GS nations
. **Yugoslavia**
RT Adriatic Sea
Bosnia and Herzegovina
Croatia
Europe
Serbska Republic

YUH–1 helicopter
USE **UH–1 helicopter**

YUH–60A helicopter
USE **UH–60A helicopter**

YUH–61A helicopter
USE **UH–61A helicopter**

Yukawa potential
RT meson–nucleon interactions
∞ potential

Yukon aircraft
USE **CL–44 aircraft**

Yukon Territory
GS nations
. Canada
. . **Yukon Territory**

Z

Z–37 aircraft
UF *Omnipol Z–37 aircraft*
GS monoplanes
. **Z–37 aircraft**
utility aircraft
. **Z–37 aircraft**

Zaire
USE **Democratic Republic of Congo**

Zambia
GS nations
. **Zambia**
RT Africa

Zeeman effect
RT ∞ effects
magnetic fields
spectroscopy
spectrum analysis
Stark effect
Voigt effect

Zener diodes
USE **avalanche diodes**

Zener effect
RT barrier layers
carrier density (solid state)
∞ carriers
∞ effects
electric discharges
field emission

zenith
DEF That point of the celestial sphere vertically overhead. The point 180 deg. from the zenith is called the nadir.
RT antipodes
apexes
celestial sphere
maxima
noon
solar position

zeolites
GS silicon compounds
. silicates
. . **zeolites**
RT ion exchange resins
minerals

zero angle of attack
GS geometry
. Euclidean geometry
. . angles (geometry)
. . . angle of attack
. . . . **zero angle of attack**

zero crossings
USE **roots of equations**

zero force curves
RT curvature
∞ curves
∞ force

zero gravity
USE **weightlessness**

zero lift
GS aerodynamic characteristics
. lift
. . **zero lift**
aerodynamic forces
. lift
. . **zero lift**
dynamic characteristics
. lift
. . **zero lift**
RT aerodynamic stalling
boundary layer separation
distribution (property)

zero point energy
DEF Kinetic energy retained by molecules of a substance at a temperature of absolute zero.
RT absolute zero
field theory (physics)
kinetic energy
thermodynamic properties

zero power reactor 2
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . heavy water reactors
. . . . **zero power reactor 2**
. . . zero power reactors
. . . . **zero power reactor 2**
. nuclear research and test reactors
. . **zero power reactor 2**

zero power reactor 3
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . zero power reactors
. . . . **zero power reactor 3**
. nuclear research and test reactors
. . **zero power reactor 3**

zero power reactor 6
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . zero power reactors
. . . . **zero power reactor 6**
. nuclear research and test reactors
. . **zero power reactor 6**

zero power reactor 9
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . zero power reactors
. . . . **zero power reactor 9**
. nuclear research and test reactors
. . **zero power reactor 9**

zero power reactors
UF *ZPR reactors*
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . **zero power reactors**
. . . . zero power reactor 2
. . . . zero power reactor 3
. . . . zero power reactor 6
. . . . zero power reactor 9

zero sound
GS acoustic properties
. sound intensity
. . **zero sound**
rates (per time)
. flux density
. . sound intensity
. . . **zero sound**
RT acoustic attenuation
acoustics
anechoic chambers
reflection
silencers
subaudible frequencies

zero-g ACPL (Spacelab)
USE **Atmospheric Cloud Physics Lab (Spacelab)**

Zeta Aurigae star
GS celestial bodies
. stars
. . double stars
. . . binary stars
. . . . eclipsing binary stars
. . . . . **Zeta Aurigae star**
RT Auriga constellation

zeta pinch
DEF Type of plasma pinch produced by an electric current applied axially to a plasma cylinder in a controlled fusion reactor.
GS pinch effect
. plasma pinch
. . **zeta pinch**
RT controlled fusion
magnetohydrodynamic stability
plasma compression
plasma control
plasma electrodes
plasma focus
Q devices
rotating plasmas
screw pinch
theta pinch

zeta thermonuclear reactor
RT pinch effect
thermonuclear power generation
thermonuclear reactions

Zeus missile
USE **Nike-Zeus missile**

Ziegler catalyst
GS catalysts
. **Ziegler catalyst**
RT polymerization

Zimbabwe
UF *Rhodesia*
GS nations
. **Zimbabwe**
RT Africa

zinc
GS chemical elements
. **zinc**
. . zinc isotopes
metals
. transition metals
. . **zinc**
. . . zinc isotopes

zinc alloys
GS alloys
. **zinc alloys**
RT bearing alloys
solders

zinc antimonides
GS antimony compounds
. antimonides
. . **zinc antimonides**
zinc compounds
. **zinc antimonides**

zinc chlorides
DEF Reaction products of hydrochloric acid and zinc; white crystals soluble in water and alcohol and with a melting point of 290 degrees C.
GS halogen compounds
. chlorine compounds
. . chlorides
. . . **zinc chlorides**
. halides
. . chlorides
. . . **zinc chlorides**
. . metal halides
. . . **zinc chlorides**
zinc compounds
. **zinc chlorides**

zinc coatings
UF *galvanizing*
GS coatings
. metal coatings
. . **zinc coatings**
RT protective coatings

zinc compounds
GS **zinc compounds**
. zinc antimonides
. zinc chlorides
. zinc fluorides
. zinc oxides
. zinc selenides
. zinc sulfides
. . wurtzite
. . zincblende
. zinc tellurides
. zinc tungstates
RT ∞ chemical compounds
Group 2B compounds
∞ metal compounds

zinc fluorides
GS halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **zinc fluorides**
. halides
. . fluorides
. . . metal fluorides
. . . . **zinc fluorides**
. . metal halides
. . . metal fluorides
. . . . **zinc fluorides**
zinc compounds
. **zinc fluorides**

zinc isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **zinc isotopes**
. zinc
. . **zinc isotopes**
metals
. transition metals
. . zinc
. . . **zinc isotopes**

zinc nickel batteries
USE **nickel zinc batteries**

zinc oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **zinc oxides**
zinc compounds
. **zinc oxides**

zinc selenides
GS chalcogenides
. selenides
. . **zinc selenides**
selenium compounds
. selenides
. . **zinc selenides**
zinc compounds
. **zinc selenides**
RT Schottky diodes

zinc silver batteries
USE **silver zinc batteries**

zinc silver oxide batteries
USE **silver zinc batteries**

zinc sulfides
GS chalcogenides
. sulfides
. . inorganic sulfides
. . . **zinc sulfides**
. . . . wurtzite
. . . . zincblende
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **zinc sulfides**
. . . . wurtzite
. . . . zincblende
zinc compounds
. **zinc sulfides**
. . wurtzite
. . zincblende

zinc tellurides
GS chalcogenides
. tellurides
. . **zinc tellurides**
tellurium compounds
. tellurides
. . **zinc tellurides**
zinc compounds
. **zinc tellurides**

zinc tungstates
GS tungsten compounds
. tungstates
. . **zinc tungstates**
zinc compounds
. **zinc tungstates**

zinc–bromide batteries
DEF Electric cells in which during charge, zinc is plated on the anode and bromine is evolved at the cathode. The bromine is transferred to an external chamber for mixing and storing with an organic liquid complexing oil. During discharge, the zinc is oxidized at the anode and the complexed bromine is reduced at the cathode.
GS electrochemical cells
. electric batteries
. . storage batteries
. . . **zinc–bromide batteries**
RT zinc–chlorine batteries

zinc–chlorine batteries
DEF Candidate electric cells under development for electric vehicles.
GS electrochemical cells
. electric batteries
. . storage batteries
. . . **zinc–chlorine batteries**
RT zinc–bromide batteries

zinc–oxygen batteries
GS electric generators
. direct power generators
. . primary batteries
. . . metal air batteries
. . . . **zinc–oxygen batteries**
electrochemical cells
. electric batteries
. . primary batteries
. . . metal air batteries
. . . . **zinc–oxygen batteries**

zincblende
DEF Zinc sulfide, ZnS; a cubic crystal. Used for sphalerite.
UF *sphalerite*
GS chalcogenides
. sulfides
. . inorganic sulfides
. . . zinc sulfides
. . . . **zincblende**
minerals
. **zincblende**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . zinc sulfides
. . . . **zincblende**
zinc compounds
. zinc sulfides
. . **zincblende**

zippers
DEF Slide fasteners consisting of interlockable elements each attached to one of the opposing edges of two tapes and a movable part called a 'slider' that spans the interlockable elemets, which when moved in one direction causes the elements one one tape to interlock with the elements on the other tape, and when moved in the opposite direction causes the elements to disengage.
GS fasteners
. **zippers**
RT holders

Zircaloy 2 (trademark)
GS alloys
. zirconium alloys
. . Zircaloys (trademark)
. . . **Zircaloy 2 (trademark)**

Zircaloys (trademark)
GS alloys
. zirconium alloys
. . **Zircaloys (trademark)**
. . . Zircaloy 2 (trademark)
RT iron alloys
tin alloys

zirconates
GS zirconium compounds
. **zirconates**
. . barium zirconates
. . strontium zirconates

zirconia
USE **zirconium oxides**

zirconium
GS chemical elements
. **zirconium**
. . zirconium isotopes
. . . zirconium 95
metals
. transition metals
. . **zirconium**
. . . zirconium isotopes
. . . . zirconium 95

zirconium 95
GS chemical elements
. nuclides

. . isotopes
. . . radioactive isotopes
. . . . **zirconium 95**
. . . zirconium isotopes
. . . . **zirconium 95**
. zirconium
. . zirconium isotopes
. . . **zirconium 95**
metals
. transition metals
. . zirconium
. . . zirconium isotopes
. . . . **zirconium 95**

zirconium alloys
GS alloys
. **zirconium alloys**
. . Zircaloys (trademark)
. . . Zircaloy 2 (trademark)
RT hafnium alloys
lithium alloys

zirconium carbides
GS carbon compounds
. carbides
. . **zirconium carbides**
zirconium compounds
. **zirconium carbides**

zirconium compounds
GS **zirconium compounds**
. zirconates
. . barium zirconates
. . strontium zirconates
. zirconium carbides
. zirconium hydrides
. zirconium iodides
. zirconium nitrides
. zirconium oxides
. . yttria-stabilized zirconia
. zirconium titanates
. . lead zirconate titanates
RT ∞ chemical compounds
Group 4B compounds
∞ metal compounds

zirconium hydrides
GS hydrogen compounds
. hydrides
. . **zirconium hydrides**
zirconium compounds
. **zirconium hydrides**

zirconium iodides
GS halogen compounds
. halides
. . metal halides
. . . **zirconium iodides**
. iodine compounds
. . iodides
. . . **zirconium iodides**
zirconium compounds
. **zirconium iodides**

zirconium isotopes
GS chemical elements
. nuclides
. . isotopes
. . . **zirconium isotopes**
. . . . zirconium 95
. zirconium
. . **zirconium isotopes**
. . . zirconium 95
metals
. transition metals
. . zirconium
. . . **zirconium isotopes**
. . . . zirconium 95

zirconium nitrides
GS nitrogen compounds
. nitrides
. . metal nitrides
. . . **zirconium nitrides**
zirconium compounds
. **zirconium nitrides**

zirconium oxides
UF *zirconia*
GS chalcogenides
. oxides
. . metal oxides
. . . **zirconium oxides**
. . . . yttria-stabilized zirconia
zirconium compounds
. **zirconium oxides**
. . yttria-stabilized zirconia

zirconium titanates
GS titanium compounds
. titanates
. . **zirconium titanates**
. . . lead zirconate titanates
zirconium compounds
. **zirconium titanates**
. . lead zirconate titanates

zodiac
RT constellations
ecliptic
Scorpius constellation
Scutum constellation

zodiacal dust
GS celestial bodies
. meteoroids
. . micrometeoroids
. . . meteoroid dust clouds
. . . . **zodiacal dust**
extraterrestrial matter
. interstellar matter
. . cosmic dust
. . . interplanetary dust
. . . . meteoroid dust clouds
. . . . . **zodiacal dust**
media
. interplanetary medium
. . interplanetary dust
. . . meteoroid dust clouds
. . . . **zodiacal dust**
particles
. dust
. . cosmic dust
. . . interplanetary dust
. . . . meteoroid dust clouds
. . . . **zodiacal dust**
RT Explorer satellites
micrometeorites
Poynting-Robertson effect
terrestrial dust belt

zodiacal light
GS electromagnetic radiation
. light (visible radiation)
. . **zodiacal light**
extraterrestrial radiation
. **zodiacal light**
RT gegenschein
Helios Project
micrometeoroids
night sky
polarized light
Poynting-Robertson effect
sky brightness
solar radiation
sunlight

zonal circulation
USE **zonal flow (meteorology)**

Zonal Earth Energy Budget Experiment
USE **LZEEBE satellite**

zonal flow (meteorology)
DEF The flow of air along a latitude circle; more specifically, the latitudinal (east or west) of existing flow. Used for zonal circulation.
UF *zonal circulation*
GS circulation
. atmospheric circulation
. . **zonal flow (meteorology)**
RT air currents
annual variations
baroclinic instability
baroclinic waves
circumpolar westerlies
climatology
intertropical convergent zones
jet streams (meteorology)
meridional flow
meteorology
middle atmosphere
mixing height
planetary waves
wind (meteorology)
wind direction
wind profiles

zonal harmonics
GS analysis (mathematics)
. functional analysis
. . harmonic analysis
. . . **zonal harmonics**
harmonics
. **zonal harmonics**

Zond 1 space probe
GS interplanetary spacecraft
. Venus probes
. . **Zond 1 space probe**
. Zond space probes
. . **Zond 1 space probe**
Soviet spacecraft
. Zond space probes
. . **Zond 1 space probe**
unmanned spacecraft
. space probes
. . Venus probes
. . . **Zond 1 space probe**
. Zond space probes
. . **Zond 1 space probe**

Zond 2 space probe
GS interplanetary spacecraft
. Mars probes
. . **Zond 2 space probe**
. Zond space probes
. . **Zond 2 space probe**
Soviet spacecraft
. Zond space probes
. . **Zond 2 space probe**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Zond 2 space probe**
. Zond space probes
. . **Zond 2 space probe**

Zond 3 space probe
GS interplanetary spacecraft
. Venus probes
. . **Zond 3 space probe**
. Zond space probes
. . **Zond 3 space probe**
Soviet spacecraft

. Zond space probes
. . **Zond 3 space probe**
unmanned spacecraft
. space probes
. . Venus probes
. . . **Zond 3 space probe**
. Zond space probes
. . **Zond 3 space probe**

Zond 4 space probe
GS interplanetary spacecraft
. Venus probes
. . **Zond 4 space probe**
. Zond space probes
. . **Zond 4 space probe**
Soviet spacecraft
. Zond space probes
. . **Zond 4 space probe**
unmanned spacecraft
. space probes
. . Venus probes
. . . **Zond 4 space probe**
. Zond space probes
. . **Zond 4 space probe**

Zond 5 space probe
GS interplanetary spacecraft
. Venus probes
. . **Zond 5 space probe**
. Zond space probes
. . **Zond 5 space probe**
Soviet spacecraft
. Zond space probes
. . **Zond 5 space probe**
unmanned spacecraft
. space probes
. . Venus probes
. . . **Zond 5 space probe**
. Zond space probes
. . **Zond 5 space probe**

Zond 6 space probe
GS interplanetary spacecraft
. Venus probes
. . **Zond 6 space probe**
. Zond space probes
. . **Zond 6 space probe**
Soviet spacecraft
. Zond space probes
. . **Zond 6 space probe**
unmanned spacecraft
. space probes
. . Venus probes
. . . **Zond 6 space probe**
. Zond space probes
. . **Zond 6 space probe**

Zond 7 space probe
GS interplanetary spacecraft
. Venus probes
. . **Zond 7 space probe**
. Zond space probes
. . **Zond 7 space probe**
Soviet spacecraft
. Zond space probes
. . **Zond 7 space probe**
unmanned spacecraft
. space probes
. . Venus probes
. . . **Zond 7 space probe**
. Zond space probes
. . **Zond 7 space probe**

Zond 8 space probe
GS interplanetary spacecraft
. Venus probes
. . **Zond 8 space probe**
. Zond space probes
. . **Zond 8 space probe**
Soviet spacecraft
. Zond space probes
. . **Zond 8 space probe**
unmanned spacecraft
. space probes
. . Venus probes
. . . **Zond 8 space probe**
. Zond space probes
. . **Zond 8 space probe**

Zond space probes
GS interplanetary spacecraft
. **Zond space probes**
. . Zond 1 space probe
. . Zond 2 space probe
. . Zond 3 space probe
. . Zond 4 space probe
. . Zond 5 space probe
. . Zond 6 space probe
. . Zond 7 space probe
. . Zond 8 space probe
Soviet spacecraft
. **Zond space probes**
. . Zond 1 **space probe**
. . Zond 2 **space probe**
. . Zond 3 **space probe**
. . Zond 4 **space probe**
. . Zond 5 space probe
. . Zond 6 space probe
. . Zond 7 space probe
. . Zond 8 space probe
unmanned spacecraft
. **Zond space probes**
. . Zond 1 space probe
. . Zond 2 space probe
. . Zond 3 space probe
. . Zond 4 space probe
. . Zond 5 space probe
. . Zond 6 space probe
. . Zond 7 space probe
. . Zond 8 space probe
RT Mars probes

zone melting
UF *zone refining*
GS phase transformations
. freezing
. . **zone melting**
. melting
. . **zone melting**
RT arc melting
crystallization
float zones
purification
refining
∞ separation
ultrapure metals
vacuum melting

zone refining
USE **zone melting**

zones
USE **regions**

∞ **zoology**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT animals
botany
entomology
∞ science
taxonomy

zoom lenses
GS lenses
. **zoom lenses**
RT lens design

zooplankton
DEF The aggregate of passively floating or drifting animal organisms in aquatic ecosystems.
GS animals
. **zooplankton**
plankton
. **zooplankton**
RT marine biology
phytoplankton

ZPR reactors
USE **zero power reactors**

Zuni rocket vehicle
GS rocket vehicles
. single stage rocket vehicles
. . **Zuni rocket vehicle**
RT solid propellant rocket engines

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16. Abstract

The *NASA Thesaurus* contains the authorized subject terms by which the documents in the NASA STI Databases are indexed and retrieved. The scope of this controlled vocabulary includes not only aerospace engineering, but all supporting areas of engineering and physics, the natural space sciences (astronomy, astrophysics, planetary science), Earth sciences, and to some extent, the biological sciences. Volume 1 – *Hierarchical Listing With Definitions* contains over 17,700 subject terms, 3,832 definitions, and more than 4,000 USE cross references. The *Hierarchical Listing* presents full hierarchical structure for each term along with 'related term' lists, and can serve as an orthographic authority. Volume 2 – *Rotated Term Display* is a ready-reference tool which provides over 21,000 additional 'access points' to the thesaurus terminology. It contains the postable and nonpostable terms found in the *Hierarchical Listing* arranged in a KWIC (key-word-in-context) index.

17. Key Words (Suggested by Author(s))	18. Distribution Statement
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